



University of Southern California Catalogue 2013–2014

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University Park Campus
Los Angeles, California 90089
(213) 740-2311

Table of Contents

xx A Message from the President	xx Graduate and Professional Education
xx Board of Trustees	xx Admission
xx Senior Administration of the University	xx Financial Aid
xx Faculty Endowments	xx Course Work Taken Elsewhere
xx About USC	xx Requirements for Graduation
xx USC Today	xx International Study
xx A Brief History	xx Special Study Options
xx Student Life	xx Graduate Degree Programs
xx Academic Policies	xx USC Graduate School
xx Academic Calendar	xx Interdisciplinary Programs
xx Publications	xx Undergraduate Programs
xx Orientation	xx Graduate and Professional Programs
xx Registration	xx USC School of Architecture
xx University Policies	xx USC Marshall School of Business
xx Examinations	xx USC Marshall School of Business
xx Academic Standards	xx USC Leventhal School of Accounting
xx Exception Procedures	xx USC School of Cinematic Arts
xx Tuition and Fees	xx USC Dornsife College of Letters, Arts and Sciences
xx Tuition and Fees, Fall 2013	xx Pre-Health Advisement
xx Undergraduate Education	xx Postbaccalaureate Premedical Program
xx Admission	xx General Education Program
xx Resident Honors Program	xx College-wide Courses
xx Financial Aid	xx Advanced and Professional Programs
xx Course Work Taken Elsewhere	xx American Language Institute
xx Requirements for Graduation	xx American Studies and Ethnicity
xx The USC Core/General Education	xx Anthropology
xx Diversity Course List	xx Art History
xx Undergraduate Degree Programs	
xx International Study Options	

xx Biological Sciences	xx Philosophy	xx USC Independent Health Professions
xx Chemistry	xx Physical Education	xx Biokinesiology and Physical Therapy
xx Classics	xx Physics and Astronomy	xx Occupational Science and Occupational Therapy
xx Comparative Literature	xx Political Science	xx USC Gould School of Law
xx Comparative Studies in Literature and Culture	xx Political Science and International Relations	xx Keck School of Medicine of USC
xx Earth Sciences	xx Jesse M. Unruh Institute of Politics	xx USC Thornton School of Music
xx East Asian Area Studies	xx Professional Writing Program	xx USC School of Pharmacy
xx East Asian Languages and Cultures	xx Psychology	xx USC Price School of Public Policy
xx Economics	xx Religion	xx USC School of Social Work
xx English	xx Slavic Languages and Literatures	xx Index
xx Environmental Studies	xx Sociology	xx Map
xx French and Italian	xx Sophomore Seminars	
xx Freshman Seminars	xx Spanish and Portuguese	
xx Gender Studies	xx Spatial Sciences Institute	
xx Geography	xx Thematic Option	
xx German	xx The Writing Program	
xx Health and Humanity	xx USC Annenberg School for Communication and Journalism	
xx History	xx School of Communication	
xx Interdisciplinary Studies	xx School of Journalism	
xx International Relations	xx USC Kaufman School of Dance	
xx Joint Educational Project	xx Ostrow School of Dentistry of USC	
xx Judaic Studies	xx USC School of Dramatic Arts	
xx Kinesiology	xx USC Rossier School of Education	
xx Learner Centered Curricula	xx USC Viterbi School of Engineering	
xx Liberal Studies	xx USC Roski School of Fine Arts	
xx Linguistics	xx USC Davis School of Gerontology	
xx Mathematical Finance		
xx Mathematics		
xx Middle East Studies		
xx Multidisciplinary Activities		
xx Multimedia Scholarship		
xx Neuroscience		
xx Ocean Sciences		

A Message from the President



THE UNIVERSITY OF SOUTHERN CALIFORNIA offers a tremendous range of academic and intellectual opportunities, and this catalogue should serve as your roadmap. In it you will find information on classes offered by our Dana and David Dornsife College of Letters, Arts and Sciences, the Graduate School and 18 different professional schools. I hope you will feel inspired to consider innovative and creative ways of pursuing your education.

To our undergraduates: You are fortunate to have advisers and professors who wholeheartedly encourage you to explore different disciplines and departments. These years should be a time of discovery, for stretching yourself intellectually, creatively and socially. One of USC's distinctive traits is its emphasis at the baccalaureate level on what we call "depth with breadth" — that is, promoting the creative combination of majors (or majors and minors) that seem far apart in the intellectual landscape. USC offers more than 150 minors, and we encourage you to examine those that challenge you, perhaps taking your studies in an entirely new direction.

To our graduate students: Your courses — though designed to focus rigorously on various specialties — are intended to deepen and expand your knowledge. We urge you to pursue interdisciplinary connections and to build relationships with your peers in other fields. These relationships will enrich your work, and increase the tremendously vibrant academic culture on our campuses.

Intellectual breadth and agility are the tools you will need to succeed in the century ahead, and the education you receive at USC will certainly equip you well. Be bold in designing your USC education — and in creating your future!

C. L. Max Nikias
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This title is awarded to a small number of professors who, because of their multidisciplinary interests and significant accomplishments in several disciplines, qualify for an appointment which transcends any single field of study. Generally, a faculty member accorded this title also has a regular faculty appointment in a specific academic unit.

The following faculty members have been awarded the title of University Professor:

Michael A. Arbib, *University Professor, holder of the Fletcher Jones Chair in Computer Science, and Professor of Computer Science, Biomedical Engineering, Biological Sciences, and Psychology*
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 Marshall Cohen, *University Professor Emeritus and Professor Emeritus of Philosophy and Law*
 Geoffrey Cowan, *University Professor, holder of the Annenberg Family Chair in Communication Leadership, and Professor of Journalism and Communication*
 Antonio Damasio, *University Professor, holder of the David Dornsife Chair, and Professor of Psychology, Neuroscience, and Neurology*
 Hanna Damasio, *University Professor, holder of the Dana Dornsife Chair, and Professor of Psychology, Neuroscience and Neurology*
 Richard A. Easterlin, *University Professor, and Professor of Economics*
 Caleb Finch, *University Professor, holder of the ARCO/William F. Kieschnick Chair in the Neurobiology of Aging, and Professor of Gerontology, Biological Sciences, Anthropology, and Psychology*
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 Michael S. Waterman, *University Professor, holder of the USC Associates Chair in Natural Sciences, and Professor of Biological Sciences, Mathematics, and Computer Science*

Distinguished Professor

This title is awarded on a very selective basis to those few professors in the university who have brought special renown to the university through their accomplishments.

The following faculty members have been awarded the title of Distinguished Professor:

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 Percival Everett II, *Distinguished Professor of English*
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 Mark Jonathan Harris, *Distinguished Professor of Cinematic Arts*
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 Peter A. Jones, *Distinguished Professor of Urology, Biochemistry and Molecular Biology, and holder of the Mark A., J. Ruth, and Stillman F. Sawyer Chair in Cancer Research*
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 Michael M.C. Lai, *Distinguished Professor Emeritus of Molecular Microbiology and Immunology, and Neurology*
 Morten J. Lauridsen, *Distinguished Professor of Composition*
 Edward E. Lawler III, *Distinguished Research Professor of Business*
 Alexandra M. Levine, *Distinguished Professor Emerita of Medicine*
 George A. Olah, *Distinguished Professor of Chemistry and Chemicals Engineering and Materials Science and holder of the Donald P. and Katherine B. Loker Chair in Organic Chemistry*
 M. Hashem Pesaran, *Distinguished Professor of Economics and holder of the John E. Elliott Chair in Economics*

Shahbudin H. Rahimtoola, *Distinguished Professor of Medicine and holder of the George C. Griffith Chair in Cardiology*

Stephen J. Ryan Jr., *Distinguished Professor of Ophthalmology and holder of the Grace and Emery Beardsley Chair of Ophthalmology*

Scott Soames, *Distinguished Professor of Philosophy*

Vaughn A. Starnes, *Distinguished Professor of Cardiothoracic Surgery and holder of the H. Russell Smith Foundation Chair for Stem Cell and Cardiovascular Thoracic Research*

Arieh Warshel, *Distinguished Professor of Chemistry and Biochemistry*

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Iris Chi, *The Golden Age Association/Frances Wu Chair in Chinese Elderly, USC School of Social Work*

Irene Chiolo, *Gabilan Assistant Professor of Biological Sciences, USC Dornsife College of Letters, Arts and Sciences*

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- Roger Ghanem, *Gordon S. Marshall Professorship in Engineering Technology, USC Viterbi School of Engineering*
- Rod Gilfry, *Stephen Crocker Professorship in Music, USC Thornton School of Music*
- Parkash Gill, *Renette and Marshall Ezralow Family Chair in Cancer Therapeutics, Keck School of Medicine of USC*
- Dana Gioia, *Judge Widney Professorship in Poetry and Public Culture, USC Office of the Provost*
- Genevieve Giuliano, *Margaret and John Ferraro Chair in Effective Local Government, USC Price School of Public Policy*
- Dana B. Goldman, *Leonard D. Schaeffer Director's Chair of the Leonard D. Schaeffer Center for Health Policy and Economics, USC Price School of Public Policy*
- David A. Goldstein, *Flores (Rene Sr., Connie, Rene Jr., Jeffrey and Brandon) Chair in Health Services Research, Keck School of Medicine of USC*
- Solomon Golomb, *Andrew and Erna Viterbi Chair in Communications, USC Viterbi School of Engineering*
- Michael I. Goran, *Dr. Robert C. and Veronica Atkins Chair in Childhood Obesity and Diabetes, Keck School of Medicine of USC*
- Midori Goto, *Jascha Heifetz Chair in Violin, USC Thornton School of Music*
- Elizabeth Graddy, *Jeffrey J. Miller Chair in Government, Business and the Economy, USC Price School of Public Policy*
- Richard K. Green, *Lusk Chair in Real Estate, USC Price School of Public Policy*
- Thomas D. Griffith, *John B. Milliken Professorship in Taxation, USC Gould School of Law*
- Ariela J. Gross, *John B. and Alice R. Sharp Professorship in Law, USC Gould School of Law*
- Stephen B. Gruber, *H. Leslie Hoffman and Elaine S. Hoffman Chair in Cancer Research, Keck School of Medicine of USC*
- Wolf Gruner, *Shapell-Guernin Chair in Jewish Studies, USC Dornsife College of Letters, Arts and Sciences*
- Roberto Grzywacz, *Dwight C. and Hildagarde E. Baum Chair in Biomedical Engineering, USC Viterbi School of Engineering*
- Patrick C. Haden, *Charles Griffin Cale Director of Athletics' Chair, USC Department of Intercollegiate Athletics*
- Gillian K. Hadfield, *Richard L. and Antoinette Schamoi Kirtland Professorship in Law, USC Gould School of Law*
- Robert W. Haile, *AFLAC Chair in Cancer Research, Keck School of Medicine of USC*
- Christopher Haiman, *AFLAC Chair in Cancer Research, Keck School of Medicine of USC*
- Kenneth Hall, *Ken Wannberg Endowed Chair in Music Editing, USC School of Cinematic Arts*
- Sarah F. Hamm-Alvarez, *Gavin S. Herbert Professorship in Pharmaceutical Sciences, USC School of Pharmacy*
- Lawrence E. Harris, *Fred V. Keenan Chair in Finance, USC Marshall School of Business*
- Hossein Hashemi, *Ming Hsieh Faculty Fellowship in Electrical Engineering, USC Viterbi School of Engineering*
- James F. Haw, *Ray R. Irani, Chairman of Occidental Petroleum Corp., Chair in Chemistry, USC Dornsife College of Letters, Arts and Sciences*
- Dennis Hedgecock, *Paxson H. Offield Professorship in Fisheries Ecology, USC Dornsife College of Letters, Arts and Sciences*
- James Lewis Heft, *Alton M. Brooks Professorship in Religion, USC Dornsife College of Letters, Arts and Sciences*
- Robert W. Hellwarth, *George T. Pfleger Chair in Electrical Engineering, USC Viterbi School of Engineering*
- Brian E. Henderson, *Kenneth T. Norris Jr. Chair in Epidemiology, Keck School of Medicine of USC*
- Guilbert C. Hentschke, *Richard T. Cooper and Mary Catherine Cooper Chair in Public School Administration, USC Rossier School of Education*
- Cynthia B. Herrup, *John R. Hubbard Chair in History, USC Dornsife College of Letters, Arts and Sciences*
- James Higginbotham, *Linda MacDonald Hilf Chair in Philosophy, USC Dornsife College of Letters, Arts and Sciences*
- W. Daniel Hillis, *Judge Widney Professorship in Engineering and Medicine, USC Viterbi School of Engineering and Keck School of Medicine of USC*
- David Hinton, *Gavin S. Herbert Professorship in Vision Research, Keck School of Medicine of USC*
- Andrea Hodge, *Philip & Cayley MacDonald Early Career Chair, USC Viterbi School of Engineering*
- Howard N. Hodis, *Harry J. Bauer and Dorothy Bauer Rawlins Professorship in Cardiology, Keck School of Medicine of USC*
- William W. Holder, *Alan Casden Dean's Chair at the Leventhal School of Accounting, USC Marshall School of Business*
- Chi-Lin Hsieh, *Catherine and Joseph Aresty Chair in Urologic Research, Keck School of Medicine of USC*
- Qiang Huang, *Gordon S. Marshall Early Career Chair, USC Viterbi School of Engineering*
- Mark Humayun, *Cornelius J. Pings Chair in Biomedical Sciences, USC Office of the Provost*
- Ray R. Irani, *Judge Widney Professorship in Chemical Engineering and Chemistry, USC Viterbi School of Engineering and USC Dornsife College of Letters, Arts and Sciences*
- Judy Irola, *Conrad Hall Chair in Cinematography and Color Timing, USC School of Cinematic Arts*
- John A. Irvine, *A. Ray Irvine Chair in Clinical Ophthalmology, Keck School of Medicine of USC*
- Sherman Jackson, *King Faisal Chair in Islamic Thought and Culture, USC Dornsife College of Letters, Arts and Sciences*
- Rahul Jain, *Kenneth C. Dahlberg Early Career Chair, USC Viterbi School of Engineering*
- Patrick James, *Dean's Professorship in International Relations, USC Dornsife College of Letters, Arts and Sciences*
- Bruce Jansson, *Driscoll/Clevenger Professorship in Social Policy and Administration, USC School of Social Work*

- Henry Jenkins, *Provost Professorship in Communication, Journalism and Cinematic Arts, USC Office of the Provost*
- Richard B. Jewell, *Hugh M. Hefner Chair for the Study of American Film, USC School of Cinematic Arts*
- Peter A. Jones, Mark A., J. Ruth and Stillman P. Sawyer *Chair in Cancer Research, Keck School of Medicine of USC*
- Thomas H. Jordan, *William M. Keck Foundation Chair in Geological Sciences, USC Dornsife College of Letters, Arts and Sciences*
- Jae U. Jung, *Fletcher Jones Foundation Chair of Molecular Microbiology and Immunology, Keck School of Medicine of USC*
- Michael Steven Kahn, *Provost Professorship in Medicine and Pharmacy, USC Office of the Provost*
- Peggy Kamuf, *Marion Frances Chevalier Professorship in French, USC Dornsife College of Letters, Arts and Sciences*
- Mark E. Kann, *USC Associates Chair Emeritus in Social Science, USC Dornsife College of Letters, Arts and Sciences*
- Eva Kanso, *Associate Professor and Zohrab A. Kaprielian Fellow in Engineering, USC Viterbi School of Engineering*
- Martin H. Kaplan, *Norman Lear Chair in Entertainment, Media and Society, USC Annenberg School for Communication and Journalism*
- Neil Kaplowitz, *USC Associates/Thomas H. Brem Chair in Medicine, Keck School of Medicine of USC*
- W. Martin Kast, *Walter A. Richter Chair in Cancer Research, Keck School of Medicine of USC*
- Steve A. Kay, *Anna H. Bing Dean's Chair in the USC Dornsife College of Letters, Arts and Sciences*
- Gregory C. Keating, *William T. Dalessi Professorship in Law, USC Gould School of Law*
- Lane Kiffin, *Charles E. and Janet R. Elerding Head Coach Position for the Cardinal Team, USC Department of Intercollegiate Athletics*
- James R. Kincaid, *Aerol Arnold Chair in English, USC Dornsife College of Letters, Arts and Sciences*
- Ralph Kirshbaum, *Gregor Piatigorsky Chair in Violoncello, USC Thornton School of Music*
- Daniel M. Klerman, *Charles L. and Ramona I. Hilliard Professorship in Law, USC Gould School of Law*
- Bob G. Knight, *Merle H. Bensinger Professorship in Gerontology, USC Davis School of Gerontology*
- Kevin Knight, *Dean's Professor of Computer Science, USC Viterbi School of Engineering*
- Jack H. Knott, *C. Erwin and Ione L. Piper Dean's Chair, USC Price School of Public Policy*
- James Knowles, *Della Martin Chair in Psychiatry and Neuroscience, Keck School of Medicine of USC*
- Tom Kundig, *Jon Adams Jerde, FAIA Chair in Architecture, USC School of Architecture*
- Charles A. Lagreco, *MacDonald and Diane Rusling Becket Professorship in Community Design, USC School of Architecture*
- Darius Lakdawalla, *Quintiles Chair in Pharmaceutical Development and Regulatory Innovation, USC School of Pharmacy*
- Amy S. Lee, *Judy and Larry Freeman Chair in Basic Science Research, Keck School of Medicine of USC*
- George Lefcoe, *Ervin and Florine Yoder Chair in Real Estate Law, USC Gould School of Law*
- Martin L. Levine, *UPS Foundation Chair in Law and Gerontology, USC Gould School of Law*
- Naomi Levine, *Gabilan Assistant Professor of Biological Sciences, USC Dornsife College of Letters, Arts and Sciences*
- Pat Levitt, *W.M. Keck Provost Professorship in Neurogenetics, Neuroscience, Psychiatry, Psychology and Pharmacy, Keck School of Medicine of USC*
- Mark F. Lew, *Joseph P. Van Der Meulen, M.D., Chair in Parkinson's Disease Research in Honor of Robert J. Pasarow, Keck School of Medicine of USC*
- Michael Lieber, *Rita and Edward Polusky Chair in Basic Cancer Research, Keck School of Medicine of USC*
- Gary Lieskovsky, *Donald G. Skinner Chair in Urology, Keck School of Medicine of USC*
- Valter Longo, *Edna M. Jones Chair in Gerontology, USC Davis School of Gerontology*
- Stephen C-Y Lu, *David Packard Chair in Manufacturing Engineering, USC Viterbi School of Engineering*
- Zhong-Lin Lu, *William M. Keck Chair in Cognitive Neuroscience, USC Dornsife College of Letters, Arts and Sciences*
- George Lucas, *Presidential Professorship in Cinematic Arts, USC Office of the Provost*
- Patrick J. Lynett, *John and Dorothy Shea Early Career Chair in Civil Engineering, USC Viterbi School of Engineering*
- Thomas D. Lyon, *Judge Edward J. and Ruey L. Guirado Chair in Law, USC Gould School of Law*
- John J. Lytle, *Wilbur N. & Ruth Van Zile Chair in Oral and Maxillofacial Surgery, Ostrow School of Dentistry of USC*
- Qingyun Ma, *Della and Harry MacDonald Dean's Chair in Architecture, USC School of Architecture*
- Deborah MacInnis, *Charles L. and Ramona I. Hilliard Professorship in Business Administration, USC Marshall School of Business*
- Anupam Madhukar, *Kenneth T. Norris Professorship in Engineering, USC Viterbi School of Engineering*
- Pascal Magne, *Don and Sybil Harrington Foundation Chair in Esthetic Dentistry, Ostrow School of Dentistry of USC*
- Peter C. Mancall, *Andrew W. Mellon Professorship in the Humanities, USC Dornsife College of Letters, Arts and Sciences*
- Andrei Marmor, *Maurice Jones Jr., Class of 1925 Professorship in Law, USC Gould School of Law*
- Maja Matarić, *Chan Soon-Shiong Chair, USC Viterbi School of Engineering*
- John Matsusaka, *Charles F. Sexton Chair in American Enterprise, USC Marshall School of Business*
- Doe Mayer, *Mary Pickford Foundation Endowed Chair, USC School of Cinematic Arts*
- Edward J. McCaffery, *Robert C. Packard Trustee Chair in Law, USC Gould School of Law*
- Jacquelyn McCroskey, *John Milner Professorship in Child Welfare, USC School of Social Work*
- Mathew D. McCubbins, *Ivabelle and Theodore Johnson Professorship in Law and Business, USC Gould School of Law*
- Daniel McFadden, *Presidential Professorship in Health Economics, USC Office of the Provost*
- Andrew P. McMahon, *W.M. Keck Provost Professorship in Stem Cell Biology and Regenerative Medicine and Biological Sciences, USC Office of the Provost*
- Glenn A. Melnick, *Blue Cross of California Chair in Health Care Finance, USC Price School of Public Policy*
- Kenneth A. Merchant, *Deloitte & Touche LLP Chair in Accountancy, USC Marshall School of Business*
- Donald Miller, *Leonard K. Firestone Professorship in Religion, USC Dornsife College of Letters, Arts and Sciences*
- Gene Miller, *Orfalea Director's Chair in Entrepreneurship, USC Marshall School of Business*
- Norman Miller, *Mendel B. Silberberg Professorship in Social Psychology, USC Dornsife College of Letters, Arts and Sciences*
- Bob Mintzer, *Bowen H. "Buzz" McCoy and Barbara M. McCoy Endowed Chair in Jazz, USC Thornton School of Music*
- Daniel R. Mishell Jr., *Lyle G. McNeile Professorship in Obstetrics, Keck School of Medicine of USC*
- Tania Modleski, *Florence R. Scott Professorship in English, USC Dornsife College of Letters, Arts and Sciences*
- Michèle E. Mor Barak, *Lenore Stein-Wood and William S. Wood Professorship in Social Work and Business in a Global Society, USC School of Social Work*
- C. Paul Morrow, *Charles F. and Helen Ann Langmade Professorship in Obstetrics and Gynecology, Keck School of Medicine of USC*
- Roseann Mulligan, *Charles M. Goldstein Professorship in Community Dentistry, Ostrow School of Dentistry of USC*
- Kevin J. Murphy, *Kenneth L. Trefftz Chair in Finance, USC Marshall School of Business*
- Rev. Cecil (Chip) Murray, *John R. Tansey Chair in Christian Ethics, USC Dornsife College of Letters, Arts and Sciences*
- Juliet Musso, *Houston Flournoy Professorship in State Government, USC Price School of Public Policy*
- Shrikanth (Shri) Narayanan, *Viterbi Professorship in Engineering, USC Viterbi School of Engineering*
- Kenneth H. Nealson, *Wrigley Chair in Environmental Studies, USC Dornsife College of Letters, Arts and Sciences*
- John T. Nicoloff, *Bernard J. Hanley Chair in Medicine, Keck School of Medicine of USC*
- C. L. Max Nikias, *Robert C. Packard President's Chair and Malcolm R. Currie Chair in Technology and the Humanities, University of Southern California*
- Steven R. Nutt, *M.C. Gill Chair in Composite Materials, USC Viterbi School of Engineering*
- George A. Olah, *Donald P. and Katherine B. Loker Chair in Organic Chemistry, USC Dornsife College of Letters, Arts and Sciences*
- Michael L. Paine, *USC Associates Assistant Professorship in Dentistry, Ostrow School of Dentistry of USC*
- Lawrence A. Palinkas, *Frances L. and Albert G. Feldman Professorship in Social Policy and Health, USC School of Social Work*
- Zoe-Vonna Palmrose, *Accounting Circle Professorship in Accounting, USC Leventhal School of Accounting*
- C.W. Park, *Joseph A. DeBell Chair in Business Administration, USC Marshall School of Business*
- Carlos N. Pato, *Franz Alexander Professorship in Psychiatry, Keck School of Medicine of USC*

- Michele T. Pato, *Della Martin Chair in Psychiatry, Keck School of Medicine of USC*
- Michael J. Patzakis, *Vincent and Julia Meyer Chair in Orthopaedic Surgery, Keck School of Medicine of USC*
- Donald L. Paul, *William M. Keck Professorship in Energy Resources, USC Office of the Provost*
- Massoud Pedram, *Stephen and Ella Varra Professorship, USC Viterbi School of Engineering*
- Mary Ann Pentz, *Sidney R. Garfield Chair in Health Sciences, Keck School of Medicine of USC*
- M. Hashem Pesaran, *John E. Elliott Chair in Economics, USC Dornsife College of Letters, Arts and Sciences*
- Nicos Petasis, *Harold and Lillian Moulton Chair in Organic/Polymer Chemistry, USC Dornsife College of Letters, Arts and Sciences*
- Zbigniew Petrovich, *Albert Soiland Professorship in Radiation Biology, Keck School of Medicine of USC*
- Gordon M. Phillips, *James McN. Stancill Chair in Business Administration, USC Marshall School of Business*
- Joan Piggott, *Gordon L. MacDonald Chair in History, USC Dornsife College of Letters, Arts and Sciences*
- G.K. Surya Prakash, *George A. and Judith A. Olah Nobel Laureate Chair in Hydrocarbon Chemistry, USC Dornsife College of Letters, Arts and Sciences*
- Viktor Prasanna, *Charles Lee Powell Chair in Engineering, USC Viterbi School of Engineering*
- Michael Press, *Harold E. Lee Chair in Cancer Research, Keck School of Medicine of USC*
- Carmen A. Puliafito, *May S. and John Hooval Dean's Chair in Medicine, Keck School of Medicine of USC*
- Catherine Quinlan, *Valerie and Ronald Sugar Dean's Chair of the USC Libraries, USC Libraries*
- Shahbudin H. Rahimtoola, *George C. Griffith Chair in Cardiology, Keck School of Medicine of USC*
- Nandini Rajagopalan, *Capt. Henry W. Simonsen Chair in Strategic Entrepreneurship, USC Marshall School of Business*
- Simon Ramo, *Presidential Chair, USC Viterbi School of Engineering*
- Narsing Rao, *Rupert and Gertrude Stieger Vision Research Chair, Keck School of Medicine of USC*
- Robert K. Rasmussen, *Carl Mason Franklin Dean's Chair in Law, USC Gould School of Law*
- Hanna Reisler, *Lloyd Armstrong Jr. Chair for Science and Engineering, USC Dornsife College of Letters, Arts and Sciences*
- Aristides A. G. Requicha, *Gordon S. Marshall Chair in Engineering, USC Viterbi School of Engineering*
- H. Robert Reynolds, *H. Robert Reynolds Professorship in Wind Conducting, USC Thornton School of Music*
- Dale H. Rice, *Leon J. Tiber and David S. Alpert Chair in Medicine, Keck School of Medicine of USC*
- Harry W. Richardson, *James Irvine Chair in Urban and Regional Planning, USC Price School of Public Policy*
- Daria Roithmayr, *George T. and Harriet E. Pflieger Chair in Law, USC Gould School of Law*
- Sheldon M. Ross, *Daniel J. Epstein Chair, USC Viterbi School of Engineering*
- John Carlos Rowe, *USC Associates Chair in Humanities, USC Dornsife College of Letters, Arts and Sciences*
- Robert Rueda, *Stephen Crocker Professorship in Education, USC Rossier School of Education*
- Stephen J. Ryan, *Grace and Emery Beardsley Chair in Ophthalmology, Keck School of Medicine of USC*
- Avishai Sadan, *G. Donald and Marian James Montgomery Dean's Chair in Dentistry, Ostrow School of Dentistry of USC*
- Alfredo A. Sadun, *Flora L. Thornton Chair in Vision Research, Keck School of Medicine of USC*
- Muhammad Sahimi, *N.I.O.C. Chair in Petroleum Engineering, USC Viterbi School of Engineering*
- Elyn R. Saks, *Orrin B. Evans Professorship in Law, USC Gould School of Law*
- Jonathan M. Samet, *Flora L. Thornton Chair in Preventive Medicine, Keck School of Medicine of USC*
- Wayne Sandholtz, *John A. McCone Chair in International Relations, USC Dornsife College of Letters, Arts and Sciences*
- Terence David Sanger, *Provost Associate Professorship in Biomedical Engineering, Neurology, and Biokinesiology and Physical Therapy, USC Office of the Provost*
- Alexander A. Sawchuck, *Leonard Silverman Chair, USC Viterbi School of Engineering*
- Leonard D. Schaeffer, *Judge Widney Professor, USC Office of the Provost*
- Alice Schoenfeld, *Alice and Eleonore Schoenfeld Endowed Chair in String Instruction, USC Thornton School of Music*
- Robert A. Scholtz, *Fred H. Cole Professorship in Electrical Engineering, USC Viterbi School of Engineering*
- Oliver Schulze, *A.C. Martin Visiting Professorship in Architectural Design, USC School of Architecture*
- Arnold Schwarzenegger, *Governor Downey Professorship in State and Global Policy, USC Office of the Provost*
- Ellen Seiter, *Stephen K. Nenno Endowed Chair in Television Studies, USC School of Cinematic Arts*
- Anthony Senagore, *Charles W. and Carolyn Costello Chair in Colorectal Disease, Keck School of Medicine of USC*
- F. Stan Settles, *IBM Chair in Engineering Management, USC Viterbi School of Engineering*
- Fei Sha, *Jack Munishian Early Career Chair, USC Viterbi School of Engineering*
- Michael H. Shapiro, *Dorothy W. Nelson Professorship in Law, USC Gould School of Law*
- Wei-Chiang Shen, *John A. Biles Professorship in Pharmaceutical Sciences, USC School of Pharmacy*
- Jean Chen Shih, *Boyd P. and Elsie D. Welin Professorship in Pharmaceutical Sciences, USC School of Pharmacy*
- Kirk Shung, *Dean's Professorship in Biomedical Engineering, USC Viterbi School of Engineering*
- Stuart E. Siegel, *Stuart E. Siegel Chair in Pediatric Oncology, Keck School of Medicine of USC*
- Leonard M. Silverman, *Fred W. O'Green Chair in Engineering, USC Viterbi School of Engineering*
- Dan Simon, *Richard L. and Maria B. Crutcher Professorship in Law, USC Gould School of Law*
- Uttam Sinha, *Watt Family Chair in Head and Neck Cancers, Keck School of Medicine of USC*
- Constantinos Sioutas, *Fred Champion Professorship in Civil and Environmental Engineering, USC Viterbi School of Engineering*
- W. David Slawson, *Torey H. Webb Professorship in Law, USC Gould School of Law*
- Bruce Smith, *Dean's Professorship in English, USC Dornsife College of Letters, Arts and Sciences*
- Edwin M. Smith, *Leon Benwell Professorship in Law, USC Gould School of Law*
- Ronald E. Smith, *Charles S. and Hildegard Warren Chair in Vision Research, Keck School of Medicine of USC*
- Julie Snow, *Nancy M. and Edward D. Fox Urban Design Critic, USC School of Architecture*
- Rajinder S. Sohal, *Timothy M. Chan Professorship in Complementary Therapeutics, USC School of Pharmacy*
- Mark Soliman, *Arthur Anderson and Company Alumni Associate Professor of Accounting, USC Leventhal School of Accounting*
- Vaughn A. Starnes, *H. Russell Smith Foundation Chair for Stem Cell and Cardiovascular Thoracic Research, Keck School of Medicine of USC*
- Nancy Staudt, *Edward G. Lewis Chair in Law, USC Gould School of Law*
- William H. Steier, *William M. Hogue Professorship in Electrical Engineering, USC Viterbi School of Engineering*
- Nomi M. Stolzenberg, *Nathan and Lilly Shapell Chair in Law, USC Gould School of Law*
- Christopher D. Stone, *J. Thomas McCarthy Trustee Chair in Law, USC Gould School of Law*
- K.R. Subramanyam, *KPMG Foundation Professorship in Accounting, USC Leventhal School of Accounting*
- Ronald D. Sugar, *Judge Widney Professorship in Management and Technology, USC Office of the Provost*
- Larry Swanson, *Milo Don and Lucille Appleman Professorship in Biological Sciences, USC Dornsife College of Letters, Arts and Sciences*
- Mary Sweeney, *Dino and Martha De Laurentiis Endowed Professorship, USC School of Cinematic Arts*
- Milind Tambe, *Helen N. & Emmett H. Jones Professorship in Engineering, USC Viterbi School of Engineering*
- Shui-Yan Tang, *Frances R. and John J. Duggan Distinguished Professorship in Public Administration, USC Price School of Public Policy*
- Michael Taylor, *Kortschak Family Endowed Division Chair in Film and Television Production, USC School of Cinematic Arts*
- Gerard J. Tellis, *Jerry and Nancy Neely Chair in American Enterprise, USC Marshall School of Business*
- Shang-Hua Teng, *Seeley G. Mudd Professorship in Engineering, USC Viterbi School of Engineering*
- Dickran M. Tevzian Jr., *Judge Widney Chair, USC Office of the Provost*
- Duncan Thomas, *Verna R. Richter Chair in Cancer Research, Keck School of Medicine of USC*
- Richard F. Thompson, *William M. Keck Chair in Biological Sciences, USC Dornsife College of Letters, Arts and Sciences*
- James Tibone, *Moss Foundation Professorship in Sports Medicine in Memory of Dr. Robert K. Kerlan, Keck School of Medicine of USC*

William G. Tierney, *Leslie Wilbur and Norma Lash Wilbur-Evelyn Kieffer Professorship in Higher Education*, USC Rossier School of Education

Penelope Trickett, *David Lawrence Stein/Violet Goldberg Sachs Professorship in Social Work*, USC School of Social Work

Debasish Tripathy, *Dr. Arthur and Priscilla Ulene Chair in Women's Cancer*, Keck School of Medicine of USC

Theodore T. Tsotsis, *Robert E. Vivian Chair in Energy Resources*, USC Viterbi School of Engineering

Lawrence Turman, *Fran and Ray Stark Endowed Chair*, USC School of Cinematic Arts

Mark Urata, *Audrey Skirball-Kenis Chair in Plastic and Reconstructive Surgery*, Keck School of Medicine of USC

R. Pete Vanderveen, *John Stauffer Dean's Chair in Pharmaceutical Sciences*, USC School of Pharmacy

William Armando Vega, *Provost Professorship in Social Work, Preventive Medicine, Psychiatry, Family Medicine and Gerontology*, USC Office of the Provost

Andrew J. Viterbi, *Presidential Chair in Engineering*, USC Viterbi School of Engineering

Hai Wang, *Northrop Chair in Engineering*, USC Viterbi School of Engineering

Pin Wang, *Zohrab A. Kaprielian Fellow in Engineering*, USC Viterbi School of Engineering

Michael S. Waterman, *USC Associates Chair in Natural Sciences*, USC Dornsife College of Letters, Arts and Sciences

Gary Watson, *Provost Professorship in Philosophy and Law*, USC Dornsife College of Letters, Arts and Sciences

John Watson, *Dana and Albert "Cubby" Broccoli Endowed Chair in Producing*, USC School of Cinematic Arts

Leslie P. Weiner, *Richard Angus Grant Sr., Chair in Neurology*, Leslie P. Weiner Chair in Neurology, Keck School of Medicine of USC

Ruth Weisberg, *Ruth Weisberg Professor in Drawing*, USC Roski School of Fine Arts

Martin H. Weiss, *Martin H. Weiss Chair in Neurosurgery*, Keck School of Medicine of USC

Randolph W. Westerfield, *Charles B. Thornton Professorship in Finance*, USC Marshall School of Business

Kathleen H. Wilber, *Mary Pickford Foundation Professorship in Gerontology*, USC Davis School of Gerontology

Alan Willner, *Steven and Kathryn Sample Chair in Engineering*, USC Viterbi School of Engineering

Ernest J. Wilson III, *Walter H. Annenberg Chair in Communication*, USC Annenberg School for Communication and Journalism

Diane Winston, *Knight Chair in Media and Religion*, USC Annenberg School for Communication and Journalism

Curt Wittig, *Paul A. Miller Chair in Letters, Arts and Sciences*, USC Dornsife College of Letters, Arts and Sciences

Michael K. Wong, *Berle and Lucy Adams Chair in Cancer Research*, Keck School of Medicine of USC

Wendy Wood, *Provost Professorship in Psychology and Business*, USC Office of the Provost

Yannis C. Yortsos, *Zohrab A. Kaprielian Dean's Chair in Engineering and Chester F. Dolley Chair in Petroleum Engineering*, USC Viterbi School of Engineering

S. Mark Young, *George Bozanic and Holman G. Hurt Chair in Sports and Entertainment Business*, USC Marshall School of Business

Fernando Zapatero, *Robert G. Kirby Chair in Behavioral Finance*, USC Marshall School of Business

Elizabeth M. Zelinski, *Rita and Edward Polusky Chair in Education and Aging*, USC Davis School of Gerontology

Robert Zemeckis, *Judge Widney Professorship*, USC Office of the Provost

Bruce Zuckerman, *Myron and Marian Casden Directorship of the Casden Institute for the Study of the Jewish Role in American Life*, USC Dornsife College of Letters, Arts and Sciences

About USC



Located at the heart of the USC campus, Tommy Trojan is the university's most iconic landmark. The statue's granite pedestal bears the five qualities of the ideal Trojan: faithful, scholarly, skillful, courageous and ambitious.

USC Today

Located near the heart of Los Angeles, the University of Southern California is one of the top private research universities in the United States, attracting students from around the globe and operating an integrated academic medical center that serves more than a million patients each year.

Since its establishment in 1880, USC has conferred degrees on more than a quarter million students — leaders who have helped Southern California emerge as an international trendsetter in public policy, economic and business affairs, urban planning and engineering, scientific research, health care, communications and the arts. Today, USC and its graduates carry forward this heritage of leadership.

The traditional function of the university is to teach students. USC is committed to promoting lifelong learning and to the principle that education thrives in a context of new knowledge creation.

USC places a premium on research, scholarship and the credentials of its faculty. Since 1969, it has been a member of the Association of American Universities, the elective body that unites the 62 premier research universities in the United States and Canada. It is accredited by the Western Association of Schools and Colleges, 985 Atlantic Ave., Suite 100, Alameda, CA 94501, (510) 748-9001. Students may review USC's accreditation documents by contacting associate provost Robin Romans.

From the start, USC has contributed to the welfare of students, faculty, staff and alumni, as well as to Southern California, the nation and the world. The university's hospitals, affiliated hospitals and partnerships with business and non-profit organizations help spread USC's expertise across the community at large.

Academic Programs

The University of Southern California upholds a tradition of academic strength at all levels — from freshman year to postdoctoral fellowship.

USC offers bachelor's degrees in 172 undergraduate majors, and, as of fall 2012, graduate students were enrolled in nearly 392 master's, certificate, doctoral and professional degree programs. Alongside these many majors, USC has developed 155 different academic and professional minors — the broadest selection of any U.S. university — to encourage students to study subjects across widely separated fields. Students may select from a variety of degree combinations under the direction of the USC Dornsife College of Letters, Arts and Sciences, the Graduate School and the university's 18 professional schools.

The USC Dornsife College of Letters, Arts and Sciences is at the heart of the university's commitment to teaching and research in the humanities, social sciences and sciences. The largest and most diverse of USC's academic divisions — in terms of both student enrollment and faculty — the college serves nearly 8,000 undergraduates and more than 1,700 graduate students, and offers more than 150 undergraduate courses of study and a full range of master's and doctoral degree programs. In addition to the undergraduate degrees offered by the college, many of the university's professional schools also offer bachelor's degree programs.

Faculty

USC's full-time faculty numbers nearly 3,600. In addition, more than 4,000 volunteer faculty members are affiliated with the Keck School of Medicine of USC, and more than 400 volunteer faculty are affiliated with the USC School of Pharmacy. Research, teaching, patient care and community service are supported by a staff of more than 12,000.

USC's faculty includes Nobel laureates George A. Olah, Murray Gell-Mann and Daniel McFadden as well as National Medal of Arts winner Morten Lauridsen, National Humanities Medal winner Kevin Starr, National Medal of Science winners Andrew Viterbi and Solomon Golomb, Turing Prize recipient Leonard Adleman, Pulitzer Prize honoree Frank Gehry, MacArthur fellows Elyn Saks, Jacob Soll and Luis Alfaro, renowned violinist Midori Goto, Michael Waterman (a founder of computational genomics), Manuel Castells (interpreter of the Internet age), and Antonio Damasio (pioneer in the neural bases of emotions). More than 200 faculty members have received prestigious academic and professional awards from organizations as varied as the National Institutes of Health, the National Science Foundation, the Department of Homeland Security, the National Endowment for the Humanities, the Alfred P. Sloan Foundation, the John Simon Guggenheim Foundation and the Academy of Motion Picture Arts and Sciences. Also on the faculty are members of the National Academy of Sciences (16), National Academy of Engineering (37), National Academy of Education (1), Institute of Medicine (17) and American Academy of Arts and Sciences (32).

Students

Diversity is a hallmark of the student community. USC students come from all 50 states, five territories and 115 countries. There are 40,000 students enrolled at the university, including some 18,000 undergraduates

and 22,000 graduate and professional students. In fall 2012, nearly 50 percent of new freshmen were from California. Approximately 40 percent of the university's total enrollment is composed of American minorities; a further 19 percent are international students. For 10 consecutive years, USC has been at the top of American universities in terms of international enrollment. Among undergraduates, approximately 50 percent are men and 50 percent are women.

The middle 50 percent SAT range of the 2012 enrolled freshman class was 1950–2190. The average unweighted GPA was 3.70. In fall 2012, there were 251 National Merit Scholars.

USC students consistently earn nationally competitive scholarships and fellowships, including Fulbright, Luce, Marshall, Truman, Rhodes and Churchill scholarships.

Research Support

USC is one of a small number of premier research institutions producing a steady stream of new knowledge, art and technology. With more than \$600 million in annual research expenditures, it ranks among the top 10 private universities in federal research activity.

Libraries

The USC Libraries develop collections and services that support and encourage the academic endeavors of faculty, students and staff; build a community of critical consumers of information; and help develop engaged world citizens. With more than 4 million volumes, 3 million photographs, 6 million microforms, and subscriptions to more than 50,000 serials and 33,000 electronic journals, the USC Libraries actively support the discovery, creation and preservation of knowledge.

The largest of USC's libraries is the Edward L. Doheny Jr. Memorial Library, which contains the research collections for most of the humanities and social sciences. Doheny Memorial Library also houses the Cinematic Arts Library, the Music Library, the East Asian Library and Special Collections.

The USC Libraries include a number of specialized libraries that serve the unique research needs of the USC community. Three libraries also are devoted to collections for their respective professions: the Asa V. Call Law Library, the Eileen and Kenneth T. Norris Medical Library, and the Jennifer Ann Wilson Dental Library and Learning Center.

The Thomas and Dorothy Leavey Library features a core collection of books and journals, two electronic information commons with nearly 200 computer workstations, more than 50 collaborative workspaces, two hands-on learning classrooms, a multimedia auditorium and more than 1,400 reader seats in a variety of formal and informal arrangements. Leavey provides faculty and students with tools to accomplish research using both traditional and electronic resources. Within Leavey, librarians and staff provide faculty with assistance in using technology and information resources to develop materials for instruction and scholarly research.

The USC Libraries have noteworthy collections in the areas of cinema, international and public affairs, American literature, regional history, marine science, philosophy, and Latin American and Korean studies, among others. The Feuchtwanger Memorial Library features an extensive collection of Lion Feuchtwanger's own works along with the rarest books from his library. The USC

Libraries are also home to the Boeckmann Center for Iberian and Latin American Studies, as well as an extensive collection of photographs chronicling the history of Southern California. A complete list of all libraries and updated hours is available online at usc.edu/libraries/ask_a_librarian.

USC's electronic resources, available online at usc.edu/libraries, include a collection of databases, electronic books, electronic journals and visual materials. USC's online library catalog, HOMER, provides a list of books, periodicals, government documents and dissertations held in libraries on the University Park Campus. The USC Libraries are also engaged in numerous digital initiatives, such as the USC Digital Library. To access these resources and learn about additional services, visit digitallibrary.usc.edu.

USC Libraries' Ask-A-Librarian service provides 24-hour-a-day professional reference assistance to students, faculty and staff. Patrons receive expert answers in person, via phone, email and online chat sessions. Ask-A-Librarian is located online at usc.edu/libraries/services/ask_a_librarian.

Computing Resources

Before activating their USC computing account, students must be registered for classes or have paid their tuition deposit and certified that they will be attending USC. Students must also agree to observe the university's computing policies, which are available at usc.edu/its/policies. Students should go to usc.edu/firstlogin to activate their USC computing account.

Illegal File Sharing

Information Technology Services (ITS) provides a variety of resources to help students understand copyright issues related to digital media and file-sharing technologies, along with the risks of illegal file sharing. For more information, see usc.edu/its/copyright.

USC's Wireless Network

Most common areas at USC are configured for wireless technology. There are two ways to connect to the USC wireless network: USC Wireless and USC Wireless Plus.

USC Wireless

USC Wireless is an open network. You can connect without entering your USC username and password. Because USC Wireless is an open network, ITS recommends that you use USC's Virtual Private Network (VPN) software to protect your personal information when using this network. See usc.edu/its/vpn for instructions.

USC Wireless Plus

USC Wireless Plus is a faster, encrypted network, available only to USC account holders. When connecting to USC Wireless Plus for the first time, you may need to configure your wireless device. For instructions, see usc.edu/its/wireless/plus.

ResNet

All the rooms in USC residence halls are connected to ResNet, a high-speed wired computer network. For more information, see usc.edu/its/resnet.

Email

USC students receive a special Gmail account that allows them to use their @usc.edu email address. This account provides 25 gigabytes of online storage space and access to Google's online word processing and spreadsheet programs, sharable calendars and more. Once students have completed the first login process, they can visit usc.edu/its/google for information about eligibility and activation instructions.

Antivirus and Other Software

For free antivirus and other software, visit software.usc.edu. (A USC login is required.) An overview of software resources is available at usc.edu/its/software. For tips on secure computing, go to usc.edu/its/security.

For useful information about IT-related security threats and updates, including warnings about the latest phishing attempts, go to the ITS Security Blog at it-security.usc.edu.

Blackboard

Blackboard is the online learning management system used by USC instructors to provide students with digital copies of syllabi, course notes, handouts, media files, Website links and hosted discussion forums. Blackboard allows students to upload assignments, take quizzes, communicate with classmates and track progress in their classes. For more information, see blackboard.usc.edu.

MyUSC

MyUSC is the university's portal, designed to provide personalized access to wide-ranging campus resources in a single location. Features include university and student group announcements, national and university news and events feeds, and access to online registration, OASIS, Blackboard and other services. MyUSC is available at my.usc.edu.

Lynda.com

USC students have free access to Lynda.com, an online training provider offering more than 1,500 video-based courses on a broad range of computing and technology topics, including Google Apps, Blackboard, Adobe products, Microsoft Office, Web design and development, audio/video production, computer programming and mobile devices. For more information, visit usc.edu/its/lynda.

USCmobile

USCmobile (mobile.usc.edu) provides access to a broad range of USC content from your smartphone or tablet, including campus directories, maps, news, events, tram routes and arrival times, and more.

Computing Documentation, Network Alerts and ITS Announcements

In addition to documentation on connecting to the USC network and using supported software programs, the ITS Website provides information about network performance issues and announcements about scheduled maintenance. Visit usc.edu/its.

USC Computing Centers

USC's computing centers offer technology-enhanced collaboration spaces, computers, wireless networking

and printing services for USC students, faculty and staff. Laptop lending is available at Waite Phillips Hall of Education (WPH B34), King Olympic Hall (KOH 206) and Henry Salvatori Computer Science Center (SAL 125). You may be asked to show your USC ID card. For more information, including computing center hours, visit usc.edu/its/spaces/computing_centers.

Getting Help

For help with network connectivity and software, contact the ITS Customer Support Center by calling 740-5555 or sending an email to consult@usc.edu. Walk-in support is available from 9 a.m. to 5 p.m., Monday through Friday, in Leavey Library's Information Commons, on the lower level. For more information, see usc.edu/its/csc.

Hospitals and Patient Care

The schools of medicine, pharmacy and dentistry, together with the divisions of biokinesiology and physical therapy and of occupational science and occupational therapy, train professionals in the health care fields, conduct original research in all aspects of biomedicine and health care, and provide high-quality patient care to the Southern California community.

The Health Sciences Campus is home to the Keck Medical Center of USC. The medical center includes private university-owned Keck Hospital of USC, USC Norris Cancer Hospital, and Healthcare Consultation Centers I and II. The 411-bed Keck Hospital of USC is an ultra-modern facility offering many specialized services and procedures that are beyond the scope of most community hospitals. USC Norris provides some of the most experienced doctors and advanced cancer treatments available.

The Keck School of Medicine of USC also provides medical staffing for the adjacent Los Angeles County+USC Medical Center, one of the largest teaching hospitals in the country, and for Children's Hospital Los Angeles, ranked fifth on the *U.S. News & World Report's* Honor Roll of best children's hospitals.

The physicians who are faculty members of the Keck School of Medicine provide care in a wide range of medical specialties from the most complex diagnoses and treatments to primary care for the entire family. Besides seeing patients on the Health Sciences Campus, the physicians also practice at the Engemann Student Health Center on the University Park Campus and in clinical satellites in downtown Los Angeles, La Cañada Flintridge, Beverly Hills and Pasadena. In addition to teaching, conducting research and caring for patients, Keck School faculty members train more than 900 medical residents and fellows.

The USC School of Pharmacy operates pharmacies in the Gwynn Wilson Student Union on the University Park Campus and the Medical Plaza Pharmacy (in Healthcare Consultation Center I building) on the Health Sciences Campus. Additionally, the school operates a UPC satellite pharmacy adjacent to the new Engemann Student Health Center. These pharmacies provide full pharmacy services including disease screenings, immunizations, medication therapy management, medication compounding and an international travel clinic. School of Pharmacy faculty, residents and students also provide pharmacy services and patient consultations at the Keck Hospital of USC, USC Norris Cancer Hospital, the

LAC+USC Medical Center and other hospitals, clinics, skilled nursing facilities, home health care agencies and pharmacies throughout Southern California.

Students and advanced specialty residents of the Ostrow School of Dentistry of USC, under the supervision of expert faculty, practice at the Norris Dental Science Center on the University Park Campus. Dental faculty members treat patients at the Ostrow School of Dentistry Faculty Practice within the Engemann Student Health Center, also on the University Park Campus. In addition, students and faculty care for patients as part of community oral health programs throughout Southern California.

Biokinesiology and physical therapy faculty see patients at the USC Physical Therapy Associates clinics in the new USC Engemann Student Health Center on the University Park Campus, at Keck Hospital of USC, USC Norris Cancer Hospital and clinical offices in the USC Health Research Association building adjacent to the Health Sciences Campus.

Occupational therapy faculty see patients at Keck Hospital of USC and USC Norris Cancer Hospital, and provide Lifestyle Redesign® treatment at the USC Occupational Therapy Faculty Practice in the Clinical Sciences Center on the Health Sciences Campus and in the Engemann Student Health Center on the University Park Campus.

Civic Engagement

The region's oldest research university, USC has been an integral part of its community for more than 130 years. Today, USC is the largest private employer in Los Angeles and is renowned for innovative university-community partnerships aimed at strengthening the neighborhoods around its University Park and Health Sciences campuses. Implemented in partnership with community agencies, civic leaders and public officials, USC's university-community initiatives focus on providing educational, cultural and developmental opportunities for children who live in the immediate neighborhoods; working with neighbors, city and county officials, and other agencies to provide safer streets; encouraging more entrepreneurs, and especially minority entrepreneurs, to establish businesses in the immediate vicinity of the campuses; and striving to employ at USC more persons who live in the areas surrounding the two campuses.

Today, academic and administrative units across the university are involved with some 400 community service programs that are making a real difference in the lives of USC's neighbors. Through the USC Family of Schools, for example, the university partners with 15 local schools, improving the classroom experience for 17,000 K-12 students. Since 1997, the USC Neighborhood Academic Initiative (NAI), a six-year pre-college-enrichment program designed to prepare low-income neighborhood students to succeed in college, has graduated more than 690 students, 100 percent of whom have earned their high school diplomas and 99 percent of whom have gone on to college. NAI graduates who are accepted to USC receive a full financial package, minus loans. Kid Watch, launched in 1996, brings together the university, the Los Angeles Police Department, the Los Angeles Unified School District Police Department and more than 1,000 community

volunteers to watch over more than 9,000 students as they walk to and from school.

Additionally, since 1994, employees, alumni and friends have lent their support to the university-community initiatives by making voluntary contributions to the annual USC Good Neighbors Campaign. As of 2012, the campaign has raised more than \$15.5 million, funding 500 university-community partnership projects.

For more information about USC's community-engagement efforts, visit usc.edu/community.

Cultural Life

USC and its graduates play an important role in making Los Angeles one of the world's great centers for arts and culture. The USC Thornton School of Music is the most active producer of live music performances in the city, presenting more than 500 music events annually. The USC School of Dramatic Arts produces a full schedule of performances as well, the USC Fisher Museum of Art regularly offers exhibitions ranging from contemporary works to antiquities, and the USC School of Cinematic Arts presents film screenings and other events, many of which are open to the public. USC's storied Doheny Memorial Library also hosts a wide variety of lectures, readings, conferences, concerts and special exhibits. In addition, Visions and Voices, USC's campus-wide arts and humanities initiative, attracts nearly 30,000 students each year to theatrical productions, music and dance performances, conferences, lectures, film screenings, and other activities both on and off campus. For up-to-date information about cultural programming at USC, call the University Ticket Office at (213) 740-GOSC (4672) or visit the online arts and events calendar (usc.edu/calendar).

Athletics

USC sponsors nine varsity sports for men and 12 for women, involving more than 600 of the nation's top-ranked athletes. In their pursuit of athletic and academic excellence, USC varsity teams have won more national championships than all but two NCAA member institutions: 23 women's team titles and 95 men's team titles — including 11 unofficial football titles. USC is one of only three universities in intercollegiate athletic history to win at least five national championships in one year (1962–63 and 1976–77). Fifty-one USC athletes have been awarded NCAA postgraduate scholarships.

In Olympic competition, USC has fielded more athletes than any other institution. Since 1904, 420 Trojan athletes have participated in the Olympic games, accumulating a total of 135 gold, 87 silver and 65 bronze medals.

A Brief History

Los Angeles was little more than a frontier town in the 1870s, when a group of public-spirited citizens with a reverence for learning first sought to establish a university in the region. Although the "city" still lacked paved streets, electric lights, telephones and a reliable fire alarm system, the effort to create an institution of higher education, led by members of the Southern California Conference of the Methodist Episcopal Church, found

At least one USC athlete has won a gold medal in every summer Olympiad since 1912, making USC the only university in the world with this distinction.

USC Alumni Association

The USC Alumni Association's mission is to support the overall advancement of the University of Southern California by engaging all alumni for life, building a culture of philanthropy among the Trojan Family and being the representative voice for all USC alumni.

With more than 300,000 members worldwide, the USC Alumni Association supports more than 100 affiliated alumni clubs, alumnae support groups, and multi-cultural and generational alumni communities. These groups collectively distribute more than \$2 million each year in scholarships for USC students. The USC Alumni Association annually hosts hundreds of events and programs around the world, and provides benefits and services to all USC alumni.

Every summer in July and August, alumni clubs around the world host SCend Offs, a USC tradition, welcoming new students and connecting current students, families and friends to the Trojan Family. Our Student Alumni Society is open to all current USC students and offers programs and events that link students to USC's vast alumni network. These events include the Trojan SCuppers (alumni-hosted dinners with students) and the USC Alumni Day of Service (an opportunity to perform volunteer work in local communities). We also offer great benefits to students such as a car rental program and test preparation discounts. To learn more about the USC Alumni Association and its student programs, visit alumni.usc.edu/students or call (213) 740-2300.

Environment

University Park Campus

Located at the same site since USC's establishment in 1880 on eight acres of land in the city of Los Angeles, the University Park Campus has grown to its present size of 229 acres. Situated three miles south of the Los Angeles Civic Center, the campus is adjacent to the museums and recreational facilities of Exposition Park, and is served by a network of freeways and Metrolink rail lines that provides access to most cultural, business and recreational areas in Southern California.

The University Park Campus consists of 155 buildings and residence halls totaling approximately 8.1 million gross square feet. Some 70 additional university buildings are located off campus, in the immediate vicinity.

an enthusiastic reception among the more far-sighted residents, who were eager to advance their community.

Among the founders of USC, the prime mover was Judge Robert Maclay Widney, a leading Los Angeles businessman who had come to the area to practice law and develop real estate. It was Widney who, after 11 years, succeeded in forming the future university's Board of Trustees and took up the challenge of securing a donation of property for the fledgling enterprise.

Health Sciences Campus

Located three miles northeast of downtown Los Angeles, the USC Health Sciences Campus is a focal point for students, patients, physicians and scientists from around the world. Here a blend of clinical, classroom and laboratory resources forms a dynamic, interactive environment that is shaping the future of health care.

The 80-acre Health Sciences Campus is home to the region's first and oldest medical and pharmacy schools, as well as to highly respected programs in biokinesiology and physical therapy and in occupational science and occupational therapy. Medical care is provided by faculty physicians in outpatient clinics and at two university-owned hospitals — the state-of-the-art Keck Hospital of USC and USC Norris Cancer Hospital — as well as at the adjacent Los Angeles County+USC Medical Center, the primary teaching hospital for the Keck School of Medicine for more than a century. The acclaimed Children's Hospital Los Angeles, staffed by Keck School faculty, is often referred to as USC's third campus. Health sciences faculty, residents and students also provide services at affiliated hospitals and health-care providers throughout Southern California and at the USC University Park Campus, a collaborative partner in numerous health sciences-related programs.

Other Locations

USC's other teaching facilities include the Orange County Center (Irvine), State Capital Center (Sacramento) and Wrigley Marine Science Center (Catalina Island).

Orange County Center (949) 437-0000, 2300 Michelson, Irvine, CA 92612, Business, Education, Pharmacy and Social Work.

State Capital Center (916) 442-6911, 1201 J Street, Sacramento, CA 95814, Public Policy and Education.

Philip K. Wrigley Marine Science Center on Catalina Island (310) 510-1364, Wrigley Marine Science Center, P.O. Box 5069, Avalon, CA 90704.

In addition, the USC Washington, D.C., Center, located in the nation's capital, houses the Office of Federal Relations, which serves as the liaison between the university and the federal government, and the Washington, D.C., Office of Research Advancement, which strengthens ties between the university's investigators and federal as well as philanthropic research sponsors.

USC Washington, D.C., Center (202) 824-5860, 701 Pennsylvania Avenue, N.W., Suite 540, Washington D.C., 20004

In 1879, three civic leaders — Ozro W. Childs, a Protestant horticulturist; former California governor John G. Downey, an Irish-Catholic businessman; and Isaias W. Hellman, a German-Jewish banker and philanthropist — deeded to the Board of Trustees 308 lots located in an area designated as "West Los Angeles," near the intersection of today's Vermont Avenue and Exposition Boulevard. A portion of the land was to be reserved for the actual campus, while sales of the remaining lots

would create an endowment to provide the seeds of financial support for the institution. More than an act of generosity, the gift of land was an expression of assuredness about the future.

In a similar vote of confidence, not to mention a display of audacity, the Board of Trustees named the nascent institution, rather grandiosely, the University of Southern California.

The Era of the Founders (1880–1921)

On September 4, 1880 — 99 years to the day after the founding of *El Pueblo de Nuestra Señora la Reina de los Angeles* — nearly a tenth of the city's population braved the late summer heat and dust to witness the laying of the cornerstone for the university's first building. Just days after the construction was completed, on October 6, 1880, USC opened its doors to welcome 53 students.

Marion McKinley Bovard became USC's first president, under an initial agreement that put him in charge of the internal organization of the university as well as its educational program for a period of five years. Bovard presided over seven boom years prior to 1887 and then over an extended period of fiscal uncertainty and near collapse, until his untimely death in December 1891.

The man who took on the task of leading the university through the impending financial crisis was Joseph P. Widney, brother of Robert Maclay Widney and the first dean of USC's medical school (founded in 1885). Widney served as president for three years, accepting no salary and paying most of his own expenses. In 1895, he stepped down from his post to resume his medical practice.

During the presidency of George W. White, USC continued to progress both financially and educationally. Although White returned to the Methodist ministry in 1899, the momentum built during his administration sustained the university throughout a four-year interregnum during which the Board of Trustees sought a suitable replacement.

George Finley Bovard, younger brother of USC's first president, took the helm of the young university in 1903. Dedicated to keeping up with the demands of Southern California's rapidly expanding population — which grew from 11,000 in 1880 to 319,000 in 1910 — USC began to evolve from a small, struggling institution into one of the principal seats of learning on the Pacific Coast.

While elsewhere in the country, the Carnegies, Cornells, Rockefellers, Vanderbilts and Stanfords had been heavily endowing universities during the late 19th century, USC forged ahead largely on the energies of its faculty, deans, presidents and trustees. Likewise, as challenging as the years of World War I proved to be, they demonstrated — as did the financial panic of the 1890s — that USC was vulnerable to economic cycles but nevertheless resilient in difficult times.

During the era of the founders, the forerunners of today's schools or departments of architecture, business, dentistry, education, engineering, fine arts, journalism, law, marine biology, music, pharmacy, philosophy, religion and sociology were added to the university.

USC marked another high point when *Los Angeles Times* sportswriter Owen R. Bird dubbed the university's spirited athletic teams the "Trojans" in 1912.

The von KleinSmid Years (1921–1947)

Rufus Bernhard von KleinSmid — or "Dr. Von" as he was affectionately known — became USC's fifth president in 1921. By the end of his first decade in office, USC had attained full national accreditation, established a graduate school to unify graduate work across the university and become a large non-denominational institution. Additionally, the university implemented a number of pioneering academic initiatives.

Von KleinSmid created an extension division at USC in 1922, offering classes in locations ranging from Glendale to San Diego. In 1924, he founded the first school of international relations in the United States; in 1929, the nation's second school of public administration was established at USC. Also in 1929, USC initiated the country's first college-level program in cinematography. The first Ph.D. degree conferred in Southern California was awarded at USC in 1923.

Whereas the first priority of von KleinSmid's administration was to expand professional training programs, the Great Depression arrived at decade's end, and, once again, USC was forced to retrench. Non-essential courses were eliminated, and USC debuted the "University of the Air," an educational outreach program broadcast on radio. Thanks to donors, von KleinSmid was able to proceed with an ambitious plan of capital expansion that added several major buildings to the campus, including Edward L. Doheny Jr. Memorial Library.

During World War II, military units took over several university buildings and the curriculum was reconfigured to include a wartime emphasis on aerospace science, geography, international relations, languages, photography and the like.

After the war, USC faced yet another challenge as the G.I. Bill brought former servicemen to campus for study. Enrollment soared from 8,500 in 1945 to more than 24,000 in 1947. Von KleinSmid, now 70 years old, announced that he would step down and become chancellor of the university for life.

The Fagg Years (1947–1957)

Taking the helm of the university in September 1947, President Fred D. Fagg Jr. joined an institution whose facilities were stretched to the limit to accommodate what became known as the "G.I. Bulge." He immediately turned his attention to easing space shortages, and in April 1948, USC dedicated some 29 buildings donated by the Federal Works Agency and relocated from Santa Ana Air Base. Fagg also initiated the construction of six new buildings, including a cafeteria and residence halls as well as classroom and research facilities.

As support for higher education increased during the post-war years, USC entered a new, modern era that brought increased significance both nationally and internationally. Fagg hastened the process by instituting modern cost-accounting practices, establishing a development office and increasing library holdings by two-thirds. He also began a program of land acquisition, expanding the boundaries of the University Park Campus and purchasing land near the county hospital to create the Health Sciences Campus.

The Topping Years (1958–1970)

In 1958, Norman H. Topping succeeded Fagg as president of USC, embarking on one of the most dynamic periods in the university's history. Topping established a

comprehensive planning commission that produced, in May 1961, the "Master Plan for Enterprise and Excellence in Education." This courageous and forward-looking academic blueprint set a goal of raising \$106,675,000 in new funds. Although Topping predicted that it might take 20 years to accomplish this goal, it was reached and surpassed in little more than five. All told, the campaign doubled USC's endowment and added 30 new buildings to the university's two campuses.

The crowning achievement of the Topping years was USC's election to the Association of American Universities, an organization today made up of 63 leading public and private universities. The AAU bases membership on general excellence, with an emphasis on graduate and research programs.

The Hubbard Years (1970–1980)

When Topping stepped down in 1970, the mantle of leadership passed to John R. Hubbard, who charted his priority as bringing USC to even higher levels of academic distinction. Toward this end, Hubbard launched the "Toward Century II" campaign, an overwhelmingly successful fund-raising effort that brought in more than \$309 million.

Although American higher education in the 1970s was characterized by lowered enrollments and a drop-off in funding, USC rose to new heights during this time. Ten major buildings were begun or completed; USC's total number of endowed chairs and professorships rose to 67; applications for admission soared from 4,100 in 1970 to more than 11,000 in 1979; and the mean grade point average for admitted freshmen rose to 3.4 on a 4.0 scale.

The Hubbard administration also brought a renewed dedication to USC's urban community. As an outward sign of this commitment, the university's Joint Educational Project was founded in 1972.

The Zumberge Years (1980–1991)

James H. Zumberge was inaugurated as USC's ninth president on May 10, 1981, during a ceremony that was the capstone of a year of celebrations marking the centennial of the university.

Building on an academic planning process that began early in his tenure, Zumberge focused on strengthening undergraduate education; expanding key doctoral, research, professional and health sciences programs; and forging stronger community connections. The Zumberge years also saw USC's highly successful participation in the 1984 Olympics.

In addition, Zumberge launched "The Campaign for USC," which at the time was the biggest fund-raising program in the university's history. When it concluded in June 1990, the campaign had raised \$641.6 million, contributing over \$188 million to USC's endowment and boosting annual support of university programs to unprecedented levels.

USC made major strides in funding for research during the Zumberge years as well. Sponsored research grew from \$71.5 million in 1981 to \$174.5 million in 1990 — a 144 percent increase. Major research efforts, such as the USC-based National Center for Integrated Photonic Technology and the Southern California Earthquake Center, contributed significantly to USC's emergence as one of the nation's premier research universities.

Among the more than a dozen major new buildings completed during Zumberge's tenure were the Hedco Neurosciences Building, General William Lyon University Center, the Cinematic Arts Complex, Pertusati University Bookstore and Kaprielian Hall, as well as major additions to the architecture and fine arts library and the law school building. Plans for a new teaching library also got under way.

USC's Health Sciences Campus, too, underwent dramatic transformations during the Zumberge decade, nearly doubling in size with the acquisition of land and existing buildings from Los Angeles County. As Zumberge stepped down, the USC Norris Comprehensive Cancer Center, which opened in 1983, was in the final stages of fund-raising for a major building addition. Additionally, construction was nearing completion on Richard K. Eamer Medical Plaza, a cooperative project of the university and National Medical Enterprises that included the 284-bed USC University Hospital and USC Healthcare Consultation Center I.

The Sample Years (1991–2010)

Steven B. Sample took office as USC's 10th president in March 1991.

Despite a first year fraught with earthquakes, riots and fiscal difficulties, he personally drafted USC's Role and Mission Statement and set in motion a strategic planning process that identified four initiatives — undergraduate education, interdisciplinary research and education, programs building upon the resources of Southern California and Los Angeles, and internationalization — for guiding USC to new heights throughout the 1990s.

Under Sample's leadership, the university developed a distinctive core curriculum as well as a broad array of academic and professional minors that made "breadth with depth" the hallmark of undergraduate education at USC. Thanks to these and other enhancements, USC became regarded nationally as a pacesetter in undergraduate education and enrolled some of the most academically talented freshman classes in the country.

Sample sharpened the university's focus on improving schools and promoting safe streets in the neighborhoods immediately surrounding its two campuses. Among the flagship programs developed to meet these goals were the USC Good Neighbors Campaign, which channels faculty and staff giving into support of USC-community partnerships, and the Family of Schools, an alliance between the university and local schools that provides educational, cultural and development opportunities for neighborhood schoolchildren. This approach to community service became a national mark of distinction when the editors of *Time* magazine and *The Princeton Review* named USC "College of the Year 2000" in recognition of its ambitious social-outreach programs.

Sample also steered USC to new fund-raising heights. Under the banner of "Building on Excellence," the university mounted a \$2.85 billion fund-raising drive that concluded in 2002 as the most successful campaign in the history of American higher education. At the time, USC was the only university to have received four nine-figure gifts — \$120 million from the Annenberg Foundation to create the USC Annenberg Center for Communication; \$113 million (later increased to \$163 million) from Alfred Mann to establish the Mann

Institute for Biomedical Engineering; \$110 million from the W. M. Keck Foundation for the Keck School of Medicine of USC; and a second gift from the Annenberg Foundation of \$100 million. In 2006, USC received a fifth nine-figure gift: \$175 million from the Lucasfilm Foundation to endow the USC School of Cinematic Arts and construct a new building for the school.

Among the major facilities opened during the Sample administration were the Thomas and Dorothy Leavey Library, Jane Hoffman Popovich and J. Kristoffer Popovich Hall, the International Residential College at Parkside, Zilkha Neurogenetic Institute, Ronald Tutor Hall, Ray R. Irani Hall, USC Healthcare Consultation Center II, the Galen Center, the Arts and Humanities Residential College at Parkside, and the USC School of Cinematic Arts complex. Additionally, fulfilling a long-held Trojan dream, ground was broken for the Ronald Tutor Campus Center in May 2008.

Sample oversaw a dramatic gain in USC's academic prowess as well. In 1994, George Olah, director of the USC Loker Hydrocarbon Research Institute, won the Nobel Prize in chemistry. The number of National Academy members on the USC faculty more than doubled during the Sample years, and sponsored research by USC investigators rose from \$183.3 million to \$464 million. USC also became world-renowned in the fields of communication, multimedia technologies and the life sciences as well as in cross-disciplinary teaching and research.

Sample stepped down from the presidency of USC effective August 2, 2010, taking a yearlong sabbatical before resuming his teaching and research work as a tenured member of the faculty of the USC Viterbi School of Engineering.

A New Era: President C. L. Max Nikias (2010–)

C. L. Max Nikias became the University of Southern California's 11th president on August 3, 2010. He is the holder of the Robert C. Packard President's Chair and the Malcolm R. Currie Chair in Technology and the Humanities.

As president, Nikias has articulated a vision for USC to attain undisputed, elite status as a global research university. His initiatives include recruiting a cadre of transformative, world-class faculty; elevating USC's academic medical enterprise; expanding USC's international presence; further improving the breadth and quality of USC's outstanding student body; and embarking on the largest fundraising campaign in the history of higher education.

The Campaign for the University of Southern California aims to raise \$6 billion to advance the university's academic priorities and expand its positive impact on the community and the world. Nikias' first two years as president were highlighted by eight transformative gifts that allowed USC to raise an unprecedented total of \$2 billion.

Nikias brought the country's largest literary festival, the Los Angeles Times Festival of Books, to USC. Also under his leadership, the university has embarked on a capital construction initiative that already includes the McKay Center, Engemann Student Health Center, a new cinematic arts building, the University Club at Stoops Hall, the Soto Building on the Health Sciences Campus, Dauterive Hall and Wallis Annenberg Hall, as

well as beautification projects for both of USC's main campuses.

Before assuming the presidency, Nikias had served as USC's chief academic officer since June 2005. In that role, he was credited with recruiting new academic leadership, strengthening the academic medical enterprise, attracting a series of major donations to the university, creating innovative cross-disciplinary programs and enhancing USC's globalization efforts as well as increasing support for students at the undergraduate, graduate and doctoral levels.

Nikias was instrumental in bringing the Shoah Foundation, originally established by filmmaker and USC trustee Steven Spielberg, to USC. The USC Shoah Foundation Institute for Visual History and Education's repository of 52,000 testimonies of Holocaust survivors represents the world's largest visual archives digital library. Nikias also established the Edward R. Roybal Institute on Aging, the Stevens Center for Innovation, the U.S.-China Institute, and the Levan Institute for Humanities and Ethics. He launched Visions and Voices, USC's campus-wide arts and humanities initiative, as well as a grant program to advance scholarship in the humanities and social sciences. In addition, he teaches freshmen about ancient Athenian democracy and drama.

With the goal of advancing medical and biological sciences and patient care at USC, Nikias spearheaded the integration of faculty practice plans at the Keck School of Medicine of USC, oversaw the transfer of Keck Hospital of USC and USC Norris Cancer Hospital from Tenet Healthcare Corporation to the university, and recruited a new leadership team for the university's medical enterprise. He currently chairs the USC Hospitals Governing Board.

In 2011, the university received a transformative \$150 million naming gift from the W. M. Keck Foundation, a gift that unified USC's medical enterprise under the name Keck Medicine of USC. This further aligned the missions of the Keck School of Medicine and Keck Medical Center (Keck Hospital of USC, USC Norris Cancer Hospital and the university's faculty practices).

Nikias joined the university faculty in 1991. As dean of the USC Viterbi School of Engineering from 2001 to 2005, he solidified the school's top-tier position, oversaw the expansion of its biomedical engineering enterprise and developed its distance-learning program into one of the largest in the country. He also established key partnerships with corporations, among them Pratt and Whitney, Airbus, Boeing, Chevron and Northrop Grumman, and led a fund-raising campaign that brought in more than \$250 million, including the historic \$52 million school-naming gift from Andrew and Erna Viterbi.

Over his two-decade career as an active scholar, Nikias has been internationally recognized for his pioneering research on digital signal processing, digital media systems and biomedicine. He was founding director of two national research centers at USC: the NSF-funded Integrated Media Systems Center and the Department of Defense (DoD)-funded Center for Research on Applied Signal Processing. He has served as a senior consultant to a wide range of corporations and as a high-level consultant to the U.S. government, holding a security clearance for 15 years. The DoD has adopted a number of his innovations and patents in sonar, radar and communication systems. The author of more than 275 journal articles and conference papers, three

textbooks and eight patents, Nikias has mentored more than 30 Ph.D. and postdoctoral students. Three of his publications have received best papers awards. Before coming to USC, he held faculty appointments at the University of Connecticut and Northeastern University.

Nikias is a member of the National Academy of Engineering and a fellow of the Institute of Electrical and Electronics Engineers and the American Association for the Advancement of Science. Among other honors, he has received the IEEE Simon Ramo Medal; the University

of New York at Buffalo's Distinguished Alumni Award and Clifford C. Furnas Memorial Award; the Aristeia medal, the Republic of Cyprus' highest honor in letters, arts and sciences; and the USC Black Alumni Association's Thomas Kilgore Service Award. He also received a commendation for cutting-edge research from the governor of California.

Nikias graduated with honors from Famagusta Gymnasium, a school that emphasizes sciences, history and Greco-Roman classics. He received a diploma from the

National Technical University of Athens (also known as National Metsovia Polytechnic, the oldest and most prestigious institution of higher education in Greece) and later earned his M.S. and Ph.D. from the State University of New York at Buffalo. He holds honorary doctorates from Hebrew Union College — Jewish Institute of Religion and the University of Cyprus.

Student Life

The Student Affairs Division has as its fundamental purpose the provision of services and resources to students which will assist them in their total development: physical, social, emotional, cultural, moral and intellectual. As such, the division complements and serves the educational, research and service objectives of faculty and students by designing programs that are an extension of the academic experience. Consistent with this charge, the division has adopted the following statement that informs and guides its policies and actions regarding the USC community.

Principles of Community

The University of Southern California's Division of Student Affairs bears a central responsibility for providing students services and resources that will assist in all aspects of their development. We further seek to foster a scholarly community in which an individual's participation in academic dialogue will be considered on its merits — and not denigrated or disregarded based on personal characteristics or group identity. Consistent with this charge, the division has adopted the following statement of guiding principles:

USC is a multicultural community of scholars from diverse racial, ethnic and class backgrounds, national origins, religious and political beliefs, physical abilities and sexual orientations. This diversity enriches all of our activities and everyday interactions, and we strive to learn from each other in an atmosphere of positive engagement and mutual respect. As a scholarly community, we aspire to create an environment in which racism, sexism, ageism, xenophobia and homophobia do not go unchallenged.

All who work, live, study and teach in the USC community are here by choice. As part of that choice, we share a commitment to these principles as an integral part of USC's mission.

Student Affairs Academic Support

As the university admits a student body increasingly qualified and motivated academically, Student Affairs is providing increased levels of support for the coordination of honors programs, development of residential hall study space, tutorial support, linkage of career guidance with academic advising, and involvement of faculty in student residence halls and all campus community activities. Such programs are described in the sections which follow. The thematic nature of the individual programs is captured by the guiding principle of "academic community."

Career Center

The USC Career Center provides information and counseling to help students explore career options including internships, full-time employment and networking opportunities. The Career Center offers assistance in resume writing, interviewing techniques and sponsors such programs as the Career Fair, Internship Week, Career Fest, numerous "diversity in the workplace" events, the Global Fellows and Dream Dollars programs and the connectSC Career Network. In addition, the center offers comprehensive career assessments. The Career Center is located on the first floor of the Student Union Building, Room 110, and is open Monday through Friday, 8:30 a.m. to 5 p.m. For more information, call (213) 740-9111 or visit careers.usc.edu.

Job Opportunities

Through connectSC, the Career Center lists internships and job postings for USC students and alumni. The listings include part- and full-time positions, on- and off-campus opportunities, as well as Work Study positions. Students can also use connectSC to participate in on-campus recruiting. Students interested in obtaining a job or internship should access the online job listing service, available 24 hours a day, by visiting the Career Center Website and registering for connectSC at careers.usc.edu.

Center for Academic Support

The Center for Academic Support (CAS) is the central resource and referral agency for learning enrichment at USC. CAS staff work with USC students, faculty and staff to complement and enhance optimal use of the educational resources of the university. The goals of this program are to facilitate independent learning, critical thinking, integrative understanding and responsible action.

CAS contributes to a collaborative approach to learning in USC's academic community. The staff at CAS works to meet individual student needs as they relate to learning enrichment. Services available include: tutoring and assistance in learning strategies and study skills. CAS offers weekly learning enrichment workshops in goal setting, time management, study skills and concentration and memory, writing skills, test-taking anxiety and note taking. Students can also schedule private workshops for small groups. Services are free to all USC students. A list of learning enrichment workshops is available in the *Schedule of Classes*.

CAS is located on the third floor of the Student Union Building, Room 301, (213) 740-0776, usc.edu/cas. The

center's email address is study@usc.edu. The hours are 8:30 a.m. to 5 p.m., Monday through Friday.

Disability Services and Programs (DSP)

Disability Services and Programs (DSP) is dedicated to maintaining an environment that ensures all students with documented disabilities at USC equal access to its educational programs, activities and facilities. Accommodations are designed to level the playing field for students with disabilities, while maintaining the integrity and standards of each of our academic programs.

Accommodations are determined on a case-by-case basis, but some examples of typical accommodations include: assistance in providing note-takers, sign language interpreters, readers, scribes, advocacy with faculty, exam proctoring, assistance with architectural barriers, accessible seating at USC sporting events, alternative text formats, adaptive technology, referrals to community resources, support groups and other support services for individual needs that are unique to a student's disability.

The office is located in Student Union Building, Room 301, and is open Monday through Friday, 8:30 a.m. to 5 p.m. Students can call (213) 740-0776, email ability@usc.edu or visit online at usc.edu/disability.

Kortschak Center for Learning and Creativity

The USC Kortschak Center for Learning and Creativity (KCLC) is for students who learn "differently" and wish to receive academic support. Students who have disability-related learning challenges are encouraged to use the KCLC. At the KCLC, students are paired with academic coaches, have access to assistive technology, can study in a quiet environment and receive guidance in their optimal way of learning.

The KCLC is located in Student Union 311 and can be reached at (213) 740-7884 (voice), (213) 740-7952 (fax), kortschakcenter@usc.edu or online at kortschakcenter.usc.edu.

Support Centered Program (SCP)

Students in the Support Centered Program (SCP) are selected through the regular university admissions process. SCP participants are provided with learning support services in collaboration with other appropriate offices and campus professionals. SCP students receive guidance in class selection, major choice, academic skills and personal concerns. The program encourages students to be actively involved in their own learning processes. Additional information can be found online at usc.edu/scp.

Undergraduate Success Program

As a major support to scholars of the Neighborhood Academic Initiative program (NAI), the Undergraduate Success Program (USP) encourages academic and personal success at USC. USP provides orientation to the Center for Academic Support, individualized and group academic consultation, mentoring opportunities and a general referral system to university programs and services. More information about USP can be found at sait.usc.edu/academicsupport/centerprograms.

Cultural Centers

USC is strongly committed to enhancing the quality of life for all students attending the university. Multifaceted resources and support are available to build on the cultural diversity present in our student body. These efforts are coordinated through the cultural centers within the Division of Student Affairs. Their focus provides opportunities for cross-cultural learning experiences for all students and a broad range of support services and educational programs for students of color. The cultural centers provide academic and personal support and identity and leadership development programs to support our diverse students.

El Centro Chicano

A department within Student Affairs, El Centro Chicano (El Centro) serves as a resource center for all Latina/o and USC students. Founded in 1972, the center fosters a community of critically thinking, socially conscious Chicana/o and Latina/o leaders, providing personal, social and academic support through graduation and beyond. El Centro Chicano also provides social and cultural programming, student advocacy, assistance for Latina/o student groups, transitional/beyond USC programming and community outreach that fosters and promotes the academic and personal success of Latina/o students. In addition, they educate the campus about Latina/o issues and the ethnic diversity represented within the community (i.e., Central and South America, Cuba, Dominican Republic, Mexico and Puerto Rico) by serving as a resource to the entire USC family.

Through the *Latino Resource Handbook*, handed out to all new Latina/o students, and the weekly *El Centro E-newsletter*, they inform students about information such as scholarship opportunities, internships, cultural events and student organizations that will help improve their university experience. El Centro serves as headquarters for approximately 21 Chicano/Latino student organizations as well as the Latino Parent Association. All students, including commuter, transfer and graduate students, are welcome to use the student lounge, kitchenette and study room.

Programs and services offered include the Latino New Student Symposium, Latino Floors (special interest housing program for first-year students), Leadership Development & Skill Building Series, Project ReMix: Exploring the Mixed Race Generation, L.A. Power Trips, Latino Speaker Series, Latino Student Empowerment Conference, Black and Latino Overnight Experience, Latino Honor Society, La Posada: Celebrating Latin American Holiday Traditions and Giving Back, Latino Parent Association and the Chicano/Latino Graduate Celebration. Programs and services consider gender, class, religion/spirituality, bi/monolingual, continuing

generations, sexual orientation, disabilities and biracial/ethnic identities.

For more information, contact (213) 740-1480, visit usc.edu/elcentro or look them up on Facebook.

Asian Pacific American Student Services

The Asian Pacific American Student Services (APASS) department is a multifaceted unit focused on the education, engagement and empowerment of students.

APASS has a two-fold mission: facilitating Asian Pacific American participation, dialogue, community-building and empowerment, while at the same time serving as a source of cross-cultural educational programming for the entire campus.

APASS programs include orientation, leadership development, service-learning and community immersion, career and peer mentoring, cross-cultural and educational programs, academic collaborations, and individual and collective advocacy.

APASS is located in the Student Union Building, Room 410, (213) 740-4999. For more information, email apass@usc.edu or visit usc.edu/apass.

Center for Black Cultural and Student Affairs

The mission of the Center for Black Cultural and Student Affairs (CBCSA) is to create an afro-centric, holistic learning environment for academic, social and professional development, as well as to provide civic engagement opportunities for all members of the USC community.

CBCSA meets its goal by targeting five major areas of focus: cultural and community development, leadership, professional development, retention and social enrichment. All CBCSA services and programs are initiated in accordance with the Division of Student Affairs' five strategic initiatives.

CBCSA, the Black Student Assembly and almost 50 black student organizations partner to offer a variety of informative academic and personal development programs, social activities and cultural events. These programs and events promote academic excellence and encourage unity among students, staff, faculty and the surrounding USC community. CBCSA provides many opportunities for students to become leaders both on and off campus. It continues to make a difference by exploring the diverse spectrum of our cultural community and encouraging students to do the same.

CBCSA is located in the Student Union Building, Room 415, (213) 740-8257. For more information, email cbcsa@usc.edu or visit usc.edu/cbcsa.

International Services

The Office of International Services (OIS), located in the Student Union Building, Room 300, assists more than 7,000 non-immigrant students, scholars, faculty and staff associated with USC in achieving their educational, professional and personal objectives. In addition, academic departments and research units receive assistance from OIS in completing the immigration formalities for hiring foreign nationals for both short-term and career appointments. OIS recognizes the many benefits of international educational exchange, and promotes these benefits both within the university and throughout the local community. On campus, OIS aims to provide opportunities for interaction among international and domestic students, scholars, faculty and staff through

programs and activities with an international and intercultural focus.

These programs include:

- **LA Today** — several outings each semester to places in Los Angeles not included on the typical tourist path
- **English Language Program** — English language instruction, field trips and social activities for spouses and scholars of the USC international community
- **Living in the U.S.** — a series of educational workshops given each semester that address issues of cultural adjustment and navigating life in the United States
- **Thanksgiving Match-up** — host families invite international students into their homes to celebrate Thanksgiving and help students learn more about American culture in general
- **International Graduation Reception** — a reception and awards ceremony for all graduating international students

For more information about any of OIS' services or programs, refer to the Website usc.edu/ois.

Parking and Transportation

Parking

USC Transportation is committed to creating the best USC experience for all students, faculty, staff and campus guests by offering affordable and convenient parking and transportation options to the campus community. USC Transportation maintains more than 7,600 on-campus parking spaces and approximately 1,300 off-campus spaces at the University Park Campus. In addition, there are approximately 1,600 parking spaces available at the Health Sciences Campus. If driving to and from campus is not an option, USC Transportation offers numerous alternate rideshare programs, most of which are subsidized by the university. Alternate rideshare programs offered include vanpools, carpools and carpool matching through Zimride, car sharing via Zipcar rentals, and mass transit ticket sales. USC Transportation also hosts a full-service Enterprise Rental Car kiosk inside its sales office for short- and long-term rentals (including students 18 years and older). For intercampus transportation, free tram shuttles and free Campus Cruiser services are available after hours and on weekends.

For more information, contact: USC Transportation Office, 620 W. 35th Street (PSX), usc.edu/parking, UPC phone number: (213) 740-3575, HSC phone number: (323) 442-1201, toll-free: (888) SC4-TRAN.

Recreational Sports

Recreational Sports (aka Rec Sports) welcomes the university community to participate in its extensive services and sports programs. The office provides students, faculty, staff and guests with numerous opportunities for sports and recreational activities. Rec Sports educates individuals in the meaningful use of leisure time through its various programs and services.

Recreational Facilities

The University Park Campus offers recreational facility choices including: the Lyon University Center, McDonalds Swim Stadium, Cromwell Field, Loker Track Stadium, Marks Tennis Stadium, a student tennis court

complex, and the Physical Education Building, which houses an indoor swimming pool, basketball court and aerobic/dance studios.

The Lyon University Center, the largest recreational facility on campus, includes the McDonalds Swim Stadium, sauna and jacuzzi; group exercise fitness studio; the newly renovated second-floor fitness area and the Robinson Exercise Room, Klug Family fitness center (weight room); gymnasium space for basketball and volleyball, racquetball and squash courts; climbing wall; and a cardiovascular center equipped with new audio-visual equipment. The equipment includes stationary bicycles, stair climbers, elliptical machines, rowing machines, and cross training equipment. There is no fee for currently registered students. However, before they can use the facility, all students must complete a general recreational facility waiver available online at usc.edu/recsports. A summer student membership is available.

The new HSC Fitness Center is a highlight on the Health Sciences Campus. Located in the 2001 Soto Street Building, the 10,000-square-foot HSC Fitness Center houses a variety of cardiovascular and fitness equipment, weights, two group exercise rooms, restrooms, showers and day-use-only lockers.

Adjacent to the fitness center, a lighted basketball court and multipurpose area (with amphitheatre) is available for drop-in, intramural programs and reservations. The HSC Fitness Center is one of the newest additions to the university's enhancement of the quality of campus life.

Programs

The staff directs more than 100 sporting programs that attract 9,800 students, staff and faculty participants and 900 club sport members. Intramural Sports offers a wide array of activities including flag football, basketball, soccer, volleyball, racquet sports and softball. More than 56 club sports are hosted by the department, including teams such as badminton, lacrosse, soccer, golf, ice hockey, cricket, dance, ultimate Frisbee, crew, surfing and water skiing.

Services

Fitness classes and wellness programs such as group exercise, pilates mat, yoga, martial arts, personal training, health and wellness sessions, Masters Swim, and massage therapy are available. Locker rental and towel service are provided for a fee. Guests, alumni and emeriti faculty are welcome to become members of the center and participate in its programs. The Pro Shop in the Lyon Center provides limited equipment rental and sales of sports items. Outdoor Adventure Rental (OAR) is a new service that provides outdoor equipment such as tents, lanterns and sleeping bags for a rental fee.

For information regarding student employment and volunteer opportunities, guest policies, conferences, recreational services, summer youth sports programs and facility reservations, call (213) 740-5127 or visit the recreational sports Website at usc.edu/recsports.

Residential Choices

USC provides attractive residential opportunities that complement the academic mission of the university. The university believes that the living experiences in residential colleges and university apartments offer a desirable and important part of the total educational

experience. Living on campus provides the opportunity for students, faculty and staff to come together within an academic residential community. Our communities combine a high degree of informal contact with a strong desire to explore the world of ideas within an intellectually stimulating environment. USC students typically take advantage of these programs and live in USC Housing for at least a portion of the time during which they are enrolled.

USC Housing

USC offers applicants a variety of living alternatives. USC houses more than 6,500 students in over 50 university-owned housing facilities. Freshmen live primarily on campus in one of our residential colleges. They are housed in either traditional residence halls or suites. Residential colleges add the additional element of faculty-in-residence, who contribute to the educational environment in housing. All rooms in USC Housing are furnished and are designed to accommodate two students each. In those residential colleges that exist in traditional residence halls, bathrooms are usually communal and dining services are in close proximity. Three residential colleges exist in large suite-style buildings that bring five to eight students together in double and single occupancy rooms around shared facilities, such as bathrooms and, in some cases, small common areas. Upperclassmen and graduates reside in apartment buildings on or near campus. Apartment-style living requires more independence. The apartment units are furnished, with most having standard kitchens, bathroom facilities and living areas. Units are designed to house two, three, four or five students per apartment, depending on the number and size of bedrooms. A limited number of furnished apartments for students with families is also available.

First-year students who apply by the freshman housing application deadline are assured of receiving university housing during their first two years at USC. There is also typically enough housing to meet the needs of most juniors and seniors, but space limitations prevent guaranteeing the entire class housing during those years. Freshmen who apply after the deadline will be housed as space permits, but everything possible is done to provide them with university housing.

Once students are in university housing, they may continue in housing by participating in the USC Housing Renewal (UHR) process each winter. This process varies considerably from how one applies for housing as a recently admitted freshman, so it is important to follow the process and meet deadlines. Incoming fall 2013 freshmen who participate in the renewal process are guaranteed housing for their sophomore year. Selection of student housing assignments will be based on a lottery process.

Housing assignments for incoming non-freshman students for the fall semester are made throughout the summer. Assignments are made on a first-come, first-served basis and subject to space availability.

Housing Services Office

USC Housing Services is responsible for processing the housing applications for students for the academic year and summer sessions. The Housing Services Office makes assignments, issues housing contracts and reassignments, and handles all billing.

New students may apply for housing once they have been admitted to the university and are urged to take advantage of the simple and convenient online application available at housing.usc.edu. Those who wish to submit a paper application will find a form on the Website that can be printed out, completed and mailed in. Applicants may request roommates on their applications; those using the online application system may take advantage of a roommate matching feature, which sorts potential roommates based on living preferences and offers them the chance to exchange email prior to formally requesting each other. Housing assignments occur based on application date, so students are encouraged to apply early.

Questions may be directed to USC Housing, Parking Structure X, (213) 740-2546 or (800) 872-4632; fax (213) 740-8488, email housing@usc.edu. Or visit the housing Website at housing.usc.edu.

Residential Education

Residential Education supervises the overall student experience through live-in staff and faculty in the USC housing system. All special-interest housing and programs that support faculty-student interaction, including residential colleges, are coordinated by this office.

Residential Colleges

USC established its first comprehensive residential college in 1987 and expanded them to all first-year students in fall 2012 with all on-campus facilities and one off-campus apartment building functioning as residential colleges. The university's stated goal is to provide the residential college experience to all incoming freshmen.

North Residential College and New Residential College provide faculty interaction and close proximity to classrooms. Home to the wellness and cinema special interest floors, New and North house mostly freshmen.

The International Residential College at Parkside provides a venue where undergraduate students and live-in USC faculty and visiting professors come together to promote stimulating cultural and intellectual exchanges among individuals from many countries residing alongside American students. This prepares students for a future that has taken on more and more the sense of a global community.

The Arts and Humanities Residential College at Parkside, which opened in fall 2007, connects students to the cultural offerings of USC and Los Angeles and features special interest floors that focus on the arts and creative endeavors of all types including architecture, creative writing, dance, drama and music.

The University Residential College at Birnkrant opened in fall 2011. Each year, invitations to this program are offered to USC's trustee and presidential scholars, as well as Mork Family and Stamps Leadership scholarship holders. Diverse programming, cultural opportunities and faculty-led trips are a regular part of the Birnkrant experience.

The South Area Residential College consists of Marks Tower, Pardee Tower, and Marks and Trojan halls. This residential college connects students to the larger USC community through its centralized campus location. Students in this residential college enjoy academic and co-curricular activities that prepare them for the future.

The West Area Residential College consists of Webb and Fluor towers. This residential college connects students to multiple special-interest opportunities. El Sol y La Luna Latino and Somerville Place cultural communities are both housed in Fluor and give their residents the opportunity to experience a smaller community within the larger USC community.

Special Interest Housing

Other residential faculty programs include Annenberg House, Honors House, Hillview, Founders and Sierra apartments, which bring together highly motivated upperclassmen and interested faculty to increase faculty-student interaction.

Programs that bring together students with a special common interest include: the Wellness Floor, Schalom (Jewish religion and culture), Great Outdoor Floor, Law Program (first year law students only), Occupational Therapy Program (majors only), Chemistry (first-year Ph.D. students only), and the Muslim, Latina/o, African-American, Business, Women in Science and Engineering, Rainbow (LGBT), Trojan Academy honors program, Music, Arts and Architecture, Dance and Drama, Creative Writing, and Cinema floors. Information on these special-interest housing programs is available in the *Living at USC* brochure, which students receive with their acceptance packet. The information can also be found on the housing Website at housing.usc.edu/HousingOptions/SpecialInterest.aspx. Call Residential Education at (213) 740-2080 for details about these programs.

A supplemental application is required for acceptance into many of these programs. Supplemental applications are available online at housing.usc.edu/HousingOptions/SpecialInterest.aspx.

Contact

Residential Education is located in the Student Union, Suite 200. Call (213) 740-2080 or visit the Website at sait.usc.edu/ResEd.

Fraternities and Sororities

Fraternities and sororities also offer a residential experience for student members. USC fraternity and sorority chapter houses are primarily located on or near 28th Street, "The Row." The cost to members living in one of these houses is comparable to the cost of living in the residence halls. Those members not living in the fraternity or sorority chapter house pay dues that provide them with most membership privileges other than housing. Housing in most fraternities and sororities is limited; students who plan to participate in Rush (membership recruitment) should not plan on immediate occupancy in the house. Please note: Joining a fraternity or sorority is not sufficient reason to be released from a university housing contract. Further information regarding housing and activities in fraternities or sororities may be obtained from the Office for Fraternity and Sorority Leadership Development, Student Union Building, Room 200, (213) 740-2080, usc.edu/student-affairs/greeklife.

Family Housing

Students with families who would like university housing should apply to the Housing Services Office, Parking Structure X, (213) 740-2546. Family housing is located

north of campus and has furnished one-bedroom and a very limited number of two-bedroom apartments.

Child Care

Students with families can apply to enroll their children in the Anna Bing Arnold Child Care Centers. The program operates in two sites on the Health Sciences and University Park Campuses. Programs for infants, toddlers and pre-school children are offered at both sites. University Park Campus also offers a Transitional-Kindergarten program. The focus is on personal and social growth, developing motor coordination and positive self-image and providing a good first school experience. Full- and part-time enrollment is available and a monthly fee is charged.

Student Athlete Academic Services

The SAAS program was established to provide student athletes with the academic support necessary for them to achieve their goal of a USC degree. By providing services through the Athletic Department such as general counseling, advisement and problem solving along with orientation, registration assistance, grade monitoring, study table and tutoring, SAAS helps student athletes fulfill the university's academic expectations for them and also helps each of them to achieve their own personal academic goals.

Student Judicial Affairs and Community Standards

Procedural and advisory matters, as well as the integrity of the student conduct system, are the responsibility of the Office of Student Judicial Affairs and Community Standards.

The Office of Student Judicial Affairs and Community Standards reviews student conduct and academic integrity matters. A complete description of the student conduct system is printed in *SCampus*, USC's student guidebook. Additional information can also be found on the Website at usc.edu/student-affairs/SJACS.

Student Health and Counseling Centers

At USC every effort is made to help students achieve and maintain good physical, mental and social health. The USC Engemann Student Health Center offers direct medical care and psychological counseling, as well as prevention programs to assist students in assuming responsibility for their personal well-being. For more information, contact the center at (213) 740-9355 or consult the center's Website (usc.edu/engemann).

The Engemann Student Health Center is located at 1031 West 34th Street. During the fall semester, the center is open Monday through Thursday from 8:30 a.m. to 7 p.m.; Friday from 9:30 a.m. to 4:30 p.m.; Saturday and Sunday (urgent care only) from 10 a.m. to 2 p.m. Note that hours of operation are subject to change. All changes will be posted one week in advance. You may also call (213) 740-9355 for current hours.

Eligibility for Services

All domestic students carrying 6 units or more during the fall and spring semesters are automatically assessed the student health fee. Students with less than 6 units may choose to purchase the health fee and receive services at the health center on their campus. All international students and Health Sciences students are

automatically assessed the student health fee regardless of the number of units taken. Students enrolled in the USC student health insurance plan are *required* to pay the student health fee. Most services are covered by the student health fee. However, there may be moderate charges for selected services such as laboratory tests, prescriptions, orthopedic appliances, copies of X-rays and medical records. These will be explained at the time of the visit. Students may use the services of the USC Engemann Student Health Center throughout the semester, as well as during breaks between academic sessions, as long as they are continuing students and are registered for the following semester.

During the summer months, students may use the services of the Engemann Student Health Center if they are continuing students and pay the summer fee.

Note: Students enrolled in classes on the University Park Campus will receive their health care service at the Engemann Student Health Center. Students enrolled in classes on the Health Sciences Campus will receive their health care service at the Eric Cohen Student Health Center on the Health Sciences Campus.

Primary Care

For the treatment of most acute illnesses and injuries, a primary care appointment can be scheduled Monday through Friday. Students can schedule appointments online at usc.edu/myshr, by calling (213) 740-9355 or in person at the USC Engemann Student Health Center.

Specialty Care

Dermatology, allergy, nutrition, internal medicine, orthopedics, acupuncture, chiropractic services and physical therapy appointments are made by a referral from a primary care practitioner only. Routine gynecology appointments may be made without a referral.

Urgent and Emergency Services

For students who have an illness or injury, which requires urgent medical attention, the USC Engemann Student Health Center Acute Care Clinic is open during regular clinic hours. If a student's medical condition requires attention during the hours the health center is closed, they may call (213) 740-9355 and follow the recorded instructions to speak with a registered nurse. In the event of a life-threatening medical emergency, on or near the USC campus, call the USC Department of Public Safety at (213) 740-4321. For off-campus emergencies, contact emergency services by dialing 911.

Ancillary Services

A clinical laboratory and a digital radiology unit support the practitioners' services. Students must pay any charges incurred for diagnostic tests and occasionally may be referred to outside facilities.

Prescriptions may be filled, for a charge, at the campus pharmacy located in the Student Union Building on the University Park Campus.

Office for Wellness and Health Promotion (OWHP)

The mission of the Office for Wellness and Health Promotion (OWHP) is to support USC's University Park Campus with health promotion that advances wellness, student learning and the unique USC student experience. OWHP assesses student health behaviors,

collaborates with campus partners and delivers best practice prevention initiatives.

Participation in OWHP initiatives can help an individual develop personal skills, create supportive campus communities and influence campus policies while developing a health-promoting environment. OWHP offers skills-based workshops with student groups on campus, including student organizations, athletic teams, greek organizations and residence halls. On- and off-campus resources and referrals are also available. Issues addressed include stress management, healthy relationships, alcohol and other drug use, nutrition, sexual health, sleep and sexual assault prevention. Current data on student health status and wellness-related behaviors are also available.

Drop by OWHP in the USC Engemann Student Health Center (ESH), room 203, for a place to study, read, pick up safer sex supplies and other free wellness resources, check out books, or just sit and relax. Peer Health Educators are available to listen or answer questions. Anonymous OraQuick Rapid HIV testing is also available.

For more information, call (213) 740-4777 or visit usc.edu/owhp.

Immunizations

The USC Engemann Student Health Center *strongly* recommends that all incoming freshmen receive the meningococcal meningitis vaccination before coming to campus, or as soon as possible after arrival.

Meningococcal meningitis is a serious illness that can lead to brain damage, disability and death. College freshmen, particularly those who live in residence halls, have a modestly increased risk of getting this disease. Presently, two vaccines are available in the U.S. that provide protection against four of the five most common strains. For more information, refer to usc.edu/engemann.

Student Counseling Services

Counseling services are available on the University Park Campus on the third floor of the USC Engemann Student Health Center.

Services are provided to help enhance students' skills and attitudes in adapting to college life, creatively handling stresses and challenges, relating to new and different people and making their USC experience satisfying and productive. Eligible students may be seen in a group, as a couple or individually, and all personal information discussed in counseling is kept confidential.

The professional staff of the Counseling Center is an ethnically and educationally diverse group which includes psychologists, social workers and staff psychiatrists. They are highly trained and experienced in helping students successfully cope with a variety of issues and concerns that are common during their college experience. Additionally, advanced graduate interns in clinical and counseling psychology and social work trainees provide a variety of services to students.

Further information is available by calling (213) 740-7711 or by visiting the Student Counseling Services' Website at usc.edu/scs. For evening or weekend emergencies, please call (213) 740-7711 and follow the recorded directions for after-hour assistance.

Student Involvement

USC offers broad and diverse opportunities for student involvement and leadership development, ranging from formal and highly organized elective offices to very informal sharing of common interests and enthusiasms. For more information, visit the Website at sait.usc.edu/studentlife.

Undergraduate Student Government

The campus-wide Undergraduate Student Government consists of legislative, programming, judicial and executive branches, whose collective purpose is to provide comprehensive representation that fosters maximum student participation. It exists to represent the interests of the students to the administration on campus issues through an extensive programming and committee structure.

Opportunities for involvement and leadership can be found in several committees such as campus affairs, community affairs, minority affairs and academic affairs, to name a few. Offices are located in the Ronald Tutor Campus Center, room 224, or visit the Website at usg.usc.edu.

Program Board

Major student events and activities at USC are sponsored by the Program Board, which represents a diverse group of student interests and organizations. The assemblies and programming committees are student-run groups that promote diversity and entertainment through progressive and innovative event programming. The student programming fee allows Program Board to plan a multitude of social, political and educational events for the USC community. These events include concerts, speakers, cultural events and various other activities. Offices are located in the Ronald Tutor Campus Center, room 224. Or visit the Website at uscprogramboard.com.

Recreation Club Council

The Recreation Club Council (RCC) is a collective organization of more than 50 club teams recognized by the Office of Campus Activities. The RCC provides organizational development, leadership opportunities, program coordination and administrative support by offering sport opportunities not necessarily met through existing academic, recreational, intramural or varsity programming. Club lists and additional RCC information is available online at usc.edu/recsports.

Graduate Student Government

The Graduate Student Government (GSG) is recognized as the official voice of the graduate student body. Representatives to the senate are elected by their peers according to academic departments and meet regularly to address the issues and concerns of the graduate student population. GSG allocates graduate student programming fee monies to academic-based student organizations as well as to students traveling to present papers at professional conferences. GSG appoints graduate and professional students to university committees, and maintains three funding boards to encourage cross-disciplinary programs, social and recreational activities and community service.

An executive committee oversees the daily operations of the senate and offers graduate students an

opportunity to become involved in the university community outside their academic discipline. Graduate and professional students wishing to become involved should call (213) 740-5649 or visit gsg.usc.edu for more information.

Student Organizations

More than 750 clubs and organizations exist with new ones added each year. Participation affords new experiences, new friendships and the opportunity to pursue an interest to higher levels of understanding and accomplishment. These organizations address a wide range of political, academic, religious, social service and recreational interests. For more information, visit usc.edu/stuorgs.

Honor Societies

Most departments and schools have an academic organization oriented toward a specific discipline. Honor societies have a selective membership process that is usually based on one or more of the following requirements: area of study, grade point average, university involvement, leadership and community service. A comprehensive list of academic honor societies is included in *SCampus*.

Spectrum

USC Spectrum, a program of the Division of Student Affairs, presents an annual season of the finest in arts and entertainment by nationally and internationally known attractions for the education and enjoyment of the USC community and its neighbors in Los Angeles.

Over the past 15 years, renowned performers including Yo-Yo Ma, Itzhak Perlman, Wayne Shorter, Rufus Wainwright, Andrew Bird and Esperanza Spalding, as well as distinguished guests Deepak Chopra, Tom Brokaw, Ted Turner, Sherman Alexie, David Gergen and many more have appeared at USC, presented by USC Spectrum.

Visit usc.edu/spectrum for a list of current events and programs.

Facilities

Student programs at USC are accommodated by a number of indoor and outdoor facilities including Bovard Auditorium, Ground Zero Performance Café, academic classrooms, Hahn Plaza, Alumni Park, Founders Park, Associates Park, E.F. Hutton Park, McCarthy Quad, and the Tutor Campus Center featuring meeting rooms, a multipurpose ballroom and Tommy's Place.

Immediately adjoining the campus is Exposition Park with its extensive complex of museums, gardens and athletic facilities. Each represents an important educational and recreational adjunct to the campus itself. The Los Angeles Coliseum is home to Trojan football, as is the Sports Arena to basketball. The grounds of Exposition Park are used by students for picnics, games and other informal events. For more information visit usc.edu/scheduling.

USC Volunteer Center (UVC)

The Volunteer Center organizes several community service projects, identifies volunteer opportunities for USC students, faculty and staff, and houses an extensive database of over 100 entries of service agencies that provide volunteer opportunities to the USC family.

Programs include Jumpstart, Friends and Neighbors Service Days, Alternative Break programs during winter and spring breaks, mentoring opportunities and more. Individuals wishing to volunteer may visit the USC Volunteer Center, Monday through Friday, Ronald Tutor Campus Center 425, from 8:30 a.m. to 5 p.m. or call (213) 740-7012. For more information, visit usc.edu/volunteer or email volctr@usc.edu.

Student Media Organizations

A number of on-campus media facilities are operated by students, allowing them to develop their journalistic talents and air their opinions while providing a service to the campus community.

Campus Newspaper

The *Daily Trojan* is the official student campus newspaper. Its coverage includes campus news, editorials, sports, features about campus activities and events, an entertainment section, and letters to the editor. Published Monday through Friday, the paper is distributed free in kiosks located in various parts of the campus and in the Student Publications Office, Student Union Building, Room 404, (213) 740-2707.

USC Yearbook

El Rodeo, USC's yearbook, highlights events of the year. Students may pre-order copies of *El Rodeo* during the fall semester by visiting uscelrodeo.com. The yearbook

is distributed in the late spring. The *El Rodeo* office is located in the Student Union Building, Room 405, (213) 740-2707.

Radio Station

KXSC Radio is the official campus student radio station broadcasting live at 1560 AM. KXSC is also available live via the Internet and can be accessed at kxsc.org. It is the student source for music, news, sports and campus information. Located in the basement of the Ronald Tutor Campus Center, the station broadcasts seven days a week. Students may work in sales, engineering, public relations and programming. Call (213) 740-1483 for music requests and additional information.

Trojan Marching Band

At 325 members strong, the Trojan Marching Band is the largest student spirit group on campus and a highly visible ambassador representing USC in the local community, the nation and the world. The band's history dates back to 1881. Since that time, the band has developed into one of the most innovative marching bands in the country.

Nicknamed *The Spirit of Troy*, the band presents a new, energetic halftime show at every home football game and sends a portion of the band to each away football game — with the full band traveling annually to the Bay Area and biennially to South Bend, Indiana for the game against Notre Dame.

The Spirit of Troy is busy year-round supporting the USC athletic teams as well as appearing in movies, on television and at special events throughout the world. In 2003, the band was the first marching band from the United States to appear at the internationally-televised Chinese New Year Parade in Hong Kong. The band has also performed at Super Bowls, the World Series, the World Cup and the Olympics.

The band is also frequently referred to as "Hollywood's Band" because of its many appearances on the silver and small screens. *The Spirit of Troy* has appeared in such feature films as *Forrest Gump* and *The Naked Gun* and has performed at three Academy Awards telecasts, two Grammy Awards, and on *Glee*, *American Idol*, *Dancing With the Stars* and *The Tonight Show*.

The Trojan Marching Band is the only collegiate marching band to possess two platinum albums for its collaboration with the rock group Fleetwood Mac on the hit single "Tusk." In 2010, the band also performed at the Coachella music festival with the metal group Coheed and Cambria. *The Spirit of Troy* has traveled to 17 countries on six continents for such events as the 50th Anniversary of D-Day in Normandy and World Expositions in Australia, Spain, Portugal, Japan and China. For more information about the Trojan Marching Band, visit its Website at uscband.com.

Academic Policies

Students are expected to be familiar with university policies and to monitor their own academic progress. They should keep all records of official grades earned, degree requirements met, transfer credits accepted and actions taken on requests for substitutions or exceptions to university policies and regulations.

Academic Calendar

Summer Session 2013

May 20–21	Registration
May 22	Classes Begin
May 27	Memorial Day, University Holiday
July 1	Thesis/Dissertation Submission
July 4–5	Independence Day, University Holiday
August 13	Classes End

Fall Semester 2013

August 19–23	Open Registration
August 26	Classes Begin
September 2	Labor Day, University Holiday
November 1	Thesis/Dissertation Submission
November 27–30	Thanksgiving Break
December 6	Classes End
December 7–10	Study Days
December 11–18	Exams
December 19–January 12	Winter Recess

Spring Semester 2014

January 9–10	Open Registration
January 13	Classes Begin
January 20	Martin Luther King Day, University Holiday
February 17	Presidents' Day, University Holiday
March 17–22	Spring Recess
April 1	Thesis/Dissertation Submission
May 2	Classes End
May 3–6	Study Days
May 7–14	Exams
May 16	Commencement

Summer Session 2014

May 19–20	Registration
May 21	Classes Begin
May 26	Memorial Day, University Holiday
July 1	Thesis/Dissertation Submission
July 4	Independence Day, University Holiday
August 12	Classes End

Fall Semester 2014

August 18–22	Open Registration
August 25	Classes Begin
September 1	Labor Day, University Holiday
November 3	Thesis/Dissertation Submission
November 26–29	Thanksgiving Break
December 5	Classes End
December 6–9	Study Days
December 10–17	Exams
December 18–January 11	Winter Recess

Spring Semester 2015

January 8–9	Open Registration
January 12	Classes Begin
January 19	Martin Luther King Day, University Holiday
February 16	Presidents' Day, University Holiday
March 16–21	Spring Recess
April 1	Thesis/Dissertation Submission
May 1	Classes End
May 2–5	Study Days
May 6–13	Exams
May 15	Commencement

Summer Session 2015

May 18–19	Registration
May 20	Classes Begin
May 25	Memorial Day, University Holiday
July 1	Thesis/Dissertation Submission
July 3	Independence Day, University Holiday
August 11	Classes End

Academic Calendars of the Professional Schools

Certain professional schools schedule the academic year according to differing calendars. These differences affect the deadlines for certain student actions (e.g., dropping or adding courses, registering for courses, obtaining refunds of tuition). Detailed information on these academic calendars is available from the individual schools.

Medicine

Consult the Office of Student Affairs, Keck School of Medicine, for the academic calendars of professional medical degree programs. The graduate programs (Master of Science and Doctor of Philosophy) as well as the Primary Care Physician Assistant Program follow the university calendar.

Dentistry

The academic year of the Ostrow School of Dentistry is divided into three 14-week trimesters. The graduate program in craniofacial biology follows the university calendar.

Independent Health Professions

Programs in occupational science and occupational therapy and biokinesiology and physical therapy follow the university calendar. Certain programs require entrance to a summer session.

Publications

The USC Catalogue

The *USC Catalogue* is the document of authority for all students. The degree requirements listed in the *USC Catalogue* supersede any information that may be contained in any print or online bulletin or viewbook of any school or department. The university reserves the right to change its policies, rules, regulations and course offerings at any time. The catalogue is distributed during Orientation and is available online at usc.edu/catalogue.

Other University Publications

Bulletins and Viewbooks

The print and online bulletins and viewbooks published by the schools provide program descriptions and information about other topics of interest to the prospective student. Publications may be obtained by contacting the individual schools.

Schedule of Classes

The *Schedule of Classes* lists the courses offered during any given term and provides detailed information on registration procedures. It also includes course descriptions, cross-listed courses, distance education

information, course syllabi, textbook information and faculty biographies. It is available online at usc.edu/soc approximately two weeks before the registration period for each session.

SCampus

This annual publication contains both general guidebook information for students and university policies concerning student conduct, administrative procedures, and student rights and responsibilities. Students are responsible for understanding and abiding by policies contained in *SCampus*. *SCampus* is available online at usc.edu/scampus.

Orientation

New Student Orientation

The university strongly recommends that all new students attend Orientation. Attending Orientation is the best way for new students to acclimate themselves to life at USC. Orientation provides students a chance to become familiar with campus, learn about student life, and register for first semester course work. In addition, new students will receive academic advisement and meet current faculty, staff and students. Program descriptions and session dates are mailed to newly admitted students in their Welcome Packet, and can also be accessed online at usc.edu/orientation.

Orientation Programs offers a variety of orientation sessions for incoming students. On-campus programs for freshman and transfer students are offered in June, July, December and January. An additional charge to cover meals, refreshments and overnight housing will apply when the Orientation session selected includes meals and/or an overnight stay. Students with financial

need may receive a partial fee waiver for their Orientation reservation.

During Orientation, students learn about the university, our wide-ranging student resources and our academic programs and expectations. Students will meet with their academic advisers and plan their first semester's schedules. Parents and family members are invited to attend Orientation to become acquainted with the university. Separate workshops, programs and lectures are offered to address the special needs and concerns of parents and family members.

International students are required to attend international student orientation, which is offered prior to the beginning of each semester. More details can be found on the Orientation Website at usc.edu/orientation. International freshman students living in Beijing, Hong Kong, Shanghai or the surrounding areas may also choose to participate in the International Kickstart programs held in May in order to meet current faculty and

students and receive online academic advisement in preparation for course registration.

USC also offers a centralized graduate Orientation in August. In addition, a number of academic departments and professional schools offer orientation sessions for graduate students, in addition to those offered by Orientation Programs. Visit the Orientation Website at usc.edu/orientation for a list of department and professional school orientation sessions. Sessions are also available for graduate assistants through the Center for Excellence in Teaching (CET). For information about CET's programs, see page xx or visit usc.edu/cet. Email uscset@usc.edu to subscribe to the *Friends of CET* weekly update.

All new entering students are assessed a mandatory one-time orientation fee, payable during their first semester of enrollment, along with tuition charges and other fees. This fee covers special services, programs and publications throughout the student's continued enrollment at USC.

Registration

Registration Procedures and Current Course Offerings

The Fall, Spring and Summer issues of the *Schedule of Classes* contain details describing registration procedures, including the Web registration process, courses offered, course descriptions, faculty listings, time and meeting place of classes, textbook information and course syllabi. The *Schedule of Classes* is available before registration each semester at usc.edu/soc. It is recommended that students register as early as possible using Web registration to save time and avoid inconvenience. Registration appointment times and permit to register information are available to continuing students in October and March on Oasis at my.usc.edu. New students will receive their permits to register during their orientation sessions. Open registration for all students continues the week prior to the start of the semester.

Enrollment Status

A student is considered to be enrolled full time in a semester when the student has registered for 12 or more units as an undergraduate student, eight or more

units as a master's level student or six or more units as a doctoral level student. All graduate assistants are classified as full-time students during the semester(s) of their appointments as long as they are enrolled for the minimum units required for their assistantship. The number of courses for which a student has registered is not a basis for determining full-time enrollment status. Units taken for audit do not apply to enrollment status calculation. Other than units, there are additional circumstances that confer full-time enrollment status. These include enrollment in: 594 Master's Thesis, 794 Doctoral Dissertation, GRSC 800 Studies for the Qualifying Examination and GRSC 810 Studies for the Master's Examination, as well as other courses and programs as determined by the Dean of Academic Records and Registrar. Verification of student enrollment status is provided by the Office of Academic Records and Registrar (Registration Building Lobby), usc.edu/dept/ARR/verification. Third-party requests for degree and enrollment information are provided by National Student Clearinghouse, studentclearinghouse.org. Enrolled students can also obtain verification on OASIS by

logging in to my.usc.edu, clicking on OASIS and clicking on Record Ordering Services.

Extra Units

A normal academic load is 16 units per semester for undergraduate students and 8 units (500-level) for graduate students. The university recommends that undergraduate students register for no more than 18 units and graduate students for no more than 16 units. Permission to enroll in more than 20 units requires written approval from the school or home department of the student's major.

Declaration of Major

All undergraduate students must record their primary major by the start of their junior year (on completion of 64 semester units). All major and minor programs of study should be recorded three semesters before the intended graduation date. Undergraduate academic departments can also perform changes of major for their students.

Declaration of Minor

Application for a minor must be made to the department or professional school offering the minor.

Classification and Numbering of Courses

The first digit of the course number indicates the year level of the course: 000 — non-credit preparatory courses, 100 — first undergraduate year, 200 — second undergraduate year, 300 — third and fourth undergraduate years without graduate credit, 400 — third and fourth undergraduate years with graduate credit for graduate students, 500 — first graduate year, 600 — second graduate year, 700 — third graduate year.

Upper division courses (300- and 400-level courses) are generally more sophisticated and demanding. They may have prerequisites or other limitations on enrollment and are usually intended for students who have some preparation, either in the specific discipline or more generally in academic study. They tend to concentrate more narrowly and intensively in scope than lower division courses in the same discipline.

The lowercase letters *ab, abcd*, etc., indicate the semesters of a course more than one semester in length. In such courses the *a* semester is prerequisite to the *b* semester, and so on. Courses designated *g* are available for general education credit. Courses designated *m* for multiculturalism meet the diversity requirement. Capital *L* indicates that all or part of the work is supervised laboratory or other work. Courses designated *x* are restricted in some manner. The course description will specify the restriction. Courses designated with a *z* are for repeated registrations for 0 credit, for which two units of tuition are charged.

The following are not available for graduate credit: courses numbered 000–399 and 490, courses designated *g* (general education), Senior Seminar courses, courses designated *x* where the description specifically excludes graduate credit.

Unit Value

The unit value of courses is indicated for each term of the course by a numeral in parentheses after the course title. All courses are on the semester unit basis. It is the student's responsibility to verify with the instructor that the number of units in which he or she has registered in any variable unit course is correct. If the units are incorrect, the student must correct them through Web registration or in person at the Registration building.

Repeating Courses

Ordinarily, courses may not be repeated for credit. For courses that may be repeated for credit, the maximum amount of credit is indicated after the unit value. Courses that may be repeated for credit reflect instances in which the subject matter is progressive in nature, or where special topics or directed research offerings exist, all reflecting unique course work.

Appropriate Course Enrollment

It is recommended that students register in courses appropriate to their academic standing — lower division students in courses below 300, upper division students in courses below 500, graduate students in courses numbered 500 or higher.

Preparatory Courses

Preparatory courses (course numbers below 100) impart the minimum skills required for college-level work. Students completing preparatory course work may receive unit credit toward enrollment status but do not receive degree credit.

Prerequisites

Prerequisites are courses that must be passed and/or specific background that must be demonstrated prior to advancing to the next course in a prescribed sequence of courses. Passage of appropriate examinations or consent of the academic unit offering the course will waive prerequisites. However, a prerequisite course within the same discipline taken after the higher level course has been passed will not be available for unit or grade point credit.

Corequisites

Corequisites are courses that must be taken at the same time as, or passed prior to, the designated course. Passage of the appropriate examinations or consent of the academic unit offering the course will waive corequisites. However, a corequisite course within the same discipline taken after the designated course has been passed will not be available for unit or grade point credit.

Recommended Preparation

Recommended preparation indicates course work or specific background that is advisable but not mandatory in preparing the student for the designated course.

Guaranteeing a Space in a Class

Registration in a class does not by itself guarantee a space in that class. An instructor may replace any student who without prior consent does not attend these class sessions: (a) the first two class sessions of the semester, or (b) the first class session of the semester for once-a-week classes. It is then the student's responsibility to withdraw officially from the course. Any class added, whether by Web registration or in person, after the first week of classes should receive the approval of the instructor.

Pass/No Pass Enrollment Option

During the first three weeks of the semester (or the third week equivalent for any session that is scheduled for less than 15 weeks), students may elect to take a course numbered below 500 on a Pass/No Pass basis. All graduate students should contact their academic advisers before enrolling in a graduate course on a Pass/No Pass basis. Refer to the Pass/No Pass Graded Work section, page xx (undergraduate) or page xx (graduate), for details on degree credit restrictions on courses taken on a Pass/No Pass basis. Students should consult their academic adviser before enrolling in any course on a Pass/No Pass basis.

In cases where a student has registered for a course on a Pass/No Pass (P/NP) basis and an academic integrity violation has occurred, a penalty letter grade may be assigned (i.e., "F"), rather than assigning a mark of Pass or No Pass.

Credit/No Credit Courses

Certain courses have been authorized by the University Committee on Curriculum to be graded Credit/No Credit. Students may not enroll in a course on a Credit/No Credit basis unless the course is listed as being offered as Credit/No Credit.

Courses Numbered 490x and 390

Many academic units offer courses numbered 490x and 390. These courses are offered on a letter-graded basis only and carry certain restrictions that are uniformly applied throughout the university.

490x Directed Research (1-8, max 12)

Courses numbered 490x are open to students who have demonstrated the ability to do independent work in the discipline. The courses require consent of the instructor and a written contract of course requirements signed by both the instructor and department chair. They are not available for graduate credit and are not open to students with less than 2.0 GPA overall or with any academic holds that restrict registration. A student may accumulate a maximum of 12 units of 490x in any one department and 16 units toward the degree.

390 Special Problems (1-4, max 4)

Courses numbered 390 are available only to seniors in their last semester who are made aware of a unit shortage after the enrollment period for that semester has passed. Students notified of a unit shortage prior to the close of the enrollment period are expected to register for regularly scheduled classes. Enrollment in a 390 class is available only by petition to the Committee on Academic Policies and Procedures (CAPP). A 390 is a supervised, individual studies course. The student and instructor must prepare a written contract of course requirements for presentation with the petition to CAPP. The petition must be recommended by the dean of the academic unit in which the student is seeking a degree. Evidence must be provided that the unit shortage was the result of circumstances beyond the student's control. Credit for only one 390 registration is accepted toward the student's baccalaureate degree.

Audited Courses

Students may elect to audit courses during the first three weeks of the semester (or the third week equivalent for any session that is scheduled for less than 15 weeks). A course taken for audit (V) will be assessed at the current tuition rate. A course taken for audit (V) will not receive credit and will not appear on the USC transcript or grade report. A course taken for audit is not included in enrollment for purposes of receiving financial aid.

Limited Status Enrollment

Limited status enrollment allows persons who have not been admitted to the university to take a limited number of courses at USC.

Eligibility for Limited Status Enrollment

Students who have not yet completed a bachelor's degree are not eligible for limited status enrollment if they have been denied admission to USC or if they have been academically disqualified or suspended from any community college, college or university.

At the post-baccalaureate level, limited status enrollment is not available to students who have been denied admission to the department offering the course unless prior approval is granted by the department and the appropriate dean.

International Students

Limited status enrollment does not fulfill requirements for issuing a student visa. International students (students studying or wishing to study in the U.S. on a non-immigrant visa) must have the approval of the Office of Admission (Hubbard Hall 218A) before registering for classes.

Restrictions on Limited Status Enrollment

A pre-baccalaureate limited status student may not register for more than 16 units; a post-baccalaureate limited status student may not register for more than 12 units.

Exceptions to this policy will be considered by the Office of Admission for USC employees and for post-baccalaureate students who submit a disclaimer of intent to pursue a USC degree.

Prior approval of the department offering the course is required for all limited status enrollment. If a limited status student is subsequently admitted to regular standing, no more than the first 16 undergraduate or the first 12 graduate units taken through limited status enrollment can be applied toward a degree. In very rare situations, individual undergraduate exceptions may be approved by the dean of the degree-conferring unit. For graduate students, the rare exception must be approved by the Vice Provost for Graduate Programs. International students must show proof of proper visa type and demonstrate English language proficiency prior to enrollment in the Limited Status program.

Dropping and Adding Courses

All such changes must be processed by Web registration or through the Registration Department. Failure to withdraw officially will result in the mark of "UW," which is computed in the GPA as zero (0) grade points. A student may withdraw from a course without academic

penalty during the first 12 weeks of the semester (or the week 12 equivalent for courses in special sessions). If the course is dropped within the first three weeks (or the week three equivalent for courses in special sessions), it does not appear on the academic transcript; if the course is dropped within weeks four through 12 (or weeks four through 12 equivalent for courses in special sessions), it will be recorded with a mark of "W." No course may be dropped after the end of the 12th week (or week 12 equivalent for courses in special sessions). A student may not withdraw from a course in which he or she committed or was accused of committing an academic integrity violation. After registering, it is the student's responsibility to withdraw officially from a course if he or she decides not to continue in a course. Courses may be added only during the first three weeks of the semester.

Registration in Graduate-Level Courses by Undergraduate Students

Exceptional undergraduate students may enroll in a graduate course. In order to do so, students must receive approval of the instructor. Students must have prior approval from the chair of the major department to count the course for undergraduate credit or audit the course. The student's major department will notify the Degree Progress Department regarding the manner in which the graduate course will be used. In no case will a student be allowed to enroll in and receive credit for a graduate course if the student's cumulative USC GPA is below 2.0.

USC-UCLA Cross-Registration for Graduate Students

As part of an academic resource-sharing program, USC graduate students have an opportunity to take a portion of their program at UCLA. This cross-registration opportunity is only available for courses or seminars not offered at USC and only to selected students. For further information on requirements, contact the USC Graduate School office (Grace Ford Salvatori Hall 315).

Credit (CR) will be granted only for work completed with a grade of B (3.0) or higher. The student's transcript

will show that the course was taken at UCLA and also record the name of the course. Units attempted at UCLA are on the quarter system. USC students who complete course work at UCLA will have those units converted to semester units for each unit completed at UCLA. Library privileges will be extended at UCLA but other privileges or services cannot be offered.

Conversion of Non-Degree Option Course Work

A student may file a Request for NDO Course Conversion form with the Registration Department to have USC courses previously taken under a non-degree option (NDO) converted to unit credit and thus appear on the USC transcript. Such a request must include all NDO courses previously attempted; requests for partial conversion will be denied. Conversion for credit requires retroactive registration in the term in which the course was attempted, including payment of the tuition differential between the NDO rate originally paid and the tuition rate in effect at the time of conversion. As in all USC courses taken in Limited Status, converted courses may not be considered for degree credit at USC unless the student is formally admitted to full standing at the university. Upon formal admission, only the first 16 NDO units taken that are available for credit toward the intended degree may be applied for baccalaureate credit, and only the first 12 NDO units taken that are available for credit toward the intended degree may be applied toward a graduate degree. Degree credit for units beyond the first 16 undergraduate or 12 graduate available units will not be allowed. All courses converted will appear on the USC transcript and will be included in the calculation of the USC GPA, regardless of whether they are being applied specifically toward the degree being pursued.

Permission to Register at Another Institution

Students who wish to take course work at another institution while continuing as enrolled students at USC will be required to obtain various levels of permission to do so. For details, see the Course Work Taken Elsewhere section on page xx (undergraduate) or page xx (graduate).

University Policies

Academic Integrity at USC

The university as an instrument of learning is predicated on the existence of an environment of integrity. As members of the academic community, faculty, students and administrative staff share the responsibility for maintaining this environment. Faculty have the primary responsibility for establishing and maintaining an atmosphere and attitude of academic integrity such that the enterprise may flourish in an open and honest way. Students share this responsibility for maintaining standards of academic performance and classroom behavior conducive to the learning process. Administrative staff are responsible for the establishment and maintenance of procedures to support and enforce those academic standards. Thus, the entire university community bears the responsibility for maintaining an environment of integrity and for confronting incidents of academic dishonesty.

Specific guidelines governing academic integrity are described in *SCampus*. Additional information can also be found on the Student Judicial Affairs and Community Standards Website at usc.edu/student-affairs/SJACS.

Family Educational Rights and Privacy Act

The University of Southern California maintains the privacy of student education records and allows students the right to inspect their education records as stated in the university's Student Education Records policy, consistent with the requirements of the Family Educational Rights and Privacy Act of 1974 (FERPA). The entire text of the university's policy is located in the Office of the General Counsel, Office of the Vice President for Student Affairs and the Registrar's Office. A summary also appears in the current edition of the student guidebook, *SCampus*. Additional information regarding FERPA is also available on the Registrar's Website, usc.edu/ferpa.

Faculty and staff who request access to student academic records in order to execute their normal duties must first review the information found on the FERPA Website and complete the tutorial before access will be granted.

Students wishing to review or seeking to amend their education records should submit a written request to the university office in which the record is maintained.

At the discretion of university officials, USC may release certain information classified as directory information unless the student requests that such information not be released. A complete listing of directory information is published in *SCampus* in the Student Education Records section and is also found in the FERPA section of the Registrar's Website, usc.edu/ferpa.

Students wishing to restrict release of directory information may do so by completing the appropriate form provided by the Registrar's Office (Registration Building Lobby). Such requests remain in effect for the academic

year. Students wishing only to have their information withheld from the online USC Student Directory should contact the Registrar's Office (Registration Building).

Recognizing that many students wish to share information from their educational records with their parents and family members, USC has developed an online system that will accomplish the following:

- allow students to grant their parents access to education and medical records in one step;
- allow parents to view elements of the education records that are available in USC's central student information system.

Students may log in to my.usc.edu and click on OASIS, USC's Web-based student information system, and use the "Establish Guest Access" feature to grant others permission to education and medical records. Instructions for logging into OASIS and granting access are provided on the university's FERPA Website at usc.edu/ferpa.

Parents who wish to gain access to information from the education records of their son or daughter will not be provided the information unless the student has granted access through OASIS or has completed the appropriate release form authorizing the university to release specific information from their education records to approved individuals.

If students grant access through OASIS, parents and family members may access education records information online through the OASIS for Guests Website. For more information regarding FERPA, including forms and instructions to log in to OASIS or OASIS for Guests, parents and students should visit the university's FERPA Website at usc.edu/ferpa.

Policy on Accommodations for Students with Disabilities

The University of Southern California is committed to full compliance with the Rehabilitation Act (Section 504) and the Americans with Disabilities Act Amendments Act (ADAAA). As part of the implementation of this law, the university will continue to provide reasonable accommodation for academically qualified students with disabilities so that they can participate fully in the university's educational programs and activities. Although USC is not required by law to change the "fundamental nature or essential curricular components of its programs in order to accommodate the needs of disabled students," the university will provide reasonable academic accommodation. It is the specific responsibility of the university administration and all faculty serving in a teaching capacity to ensure the university's compliance with this policy.

The general definition of a student with a disability is any person who has "a physical or mental impairment which substantially limits one or more of such person's major life activities," and any person who has "a history of, or is regarded as having, such an impairment." Reasonable academic and physical accommodations include but are not limited to: extended time on examinations; advance notice regarding booklists for visually impaired and some learning disabled students; use of academic aides in the classroom such as notetakers and sign language interpreters; accessibility for students who use wheelchairs and those with mobility impairments; and need for special classroom furniture or special equipment in the classroom.

Procedures for Obtaining Accommodations

Students with disabilities are encouraged to contact Disability Services and Programs (DSP) prior to or during

the first week of class attendance or as early in the semester as possible. The office will work with the course instructor and his or her department, and the student to arrange for reasonable accommodations. It is the student's responsibility to provide documentation verifying disability in a timely way.

See sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html for documentation guidelines, policies and procedures.

Academic Accommodations

Students seeking academic accommodations due to a disability should make the request to the course instructor prior to or during the first week of class attendance or as early in the semester as possible. Course instructors should require that a student present verification of documentation of a disability from Disability Services and Programs if academic accommodations are requested. The USC Gould School of Law has a unit-specific policy for handling requests for academic accommodations; however, all students with disabilities should register with DSP. Refer to the *Law School Student Handbook*.

For assistance in how to provide reasonable accommodations for a particular disability, course instructors are encouraged to consult with the staff at DSP. Students requesting academic accommodations must have verification of disability.

Grievance Procedures

Detailed information about processing a grievance is found in the Student Grievance Procedure section of *SCampus*, a guidebook for USC students, and in a brochure available in the Disability Services and Programs office, STU 301.

Examinations

Final Examinations Make-up Policy

When a final examination falls at a time that conflicts with a student's observance of a holy day, faculty members must accommodate a request for an alternate examination date at a time that does not violate the student's religious creed.

A student must discuss a final examination conflict with the professor no later than two weeks prior to the scheduled examination date to arrange an acceptable alternate examination date.

Administrative Examinations

The following administrative examinations are given at USC:

Placement Examinations

Placement examinations determine the student's level of ability and appropriate placement in mathematics, chemistry and foreign languages. These exams carry no unit credit but can be used to fulfill a required or elective subject area.

Placement exams are administered by the USC Center for Testing and Assessment in mathematics (MATH 040X, 108, 116, 117, 118 and 125), chemistry (CHEM 050, 102, 105A or 105), and the International Student English Examination (ISE) in conjunction with the American

Language Institute. These placement exams are administered on scheduled dates on the USC campus and require a reservation with the Center for Testing and Assessment. All exams require a USC ID and/or proof of USC enrollment. For additional information, contact the USC Center for Testing and Assessment, STU 301, (213) 740-7166, sait.usc.edu/academicsupport/cta.

Placement in elementary and intermediate foreign language courses is made by the foreign language placement exams. Transfer courses equivalent to a USC language course fulfill the prerequisite for the next course in the sequence, but students are required to take the USC placement exam. Foreign Language placement examinations are administered by the Language Center on scheduled dates throughout the academic year and during summers. For additional information concerning foreign language tests, contact the USC Language Center, THH 309, (213) 740-1188, language.usc.edu.

Transfer students may be advised (although not required) to repeat, without additional credit, a semester or semesters of instruction to qualify for the next level in the sequence if their skills are judged insufficient at the time of testing. Questions concerning foreign language placement should be directed to the chair of the appropriate Language department.

University Writing Examination

Students who score below specified levels on certain sections of the SAT or ACT exams and students completing American Language Institute course work are required to take the University Writing Examination to determine if they must complete preparatory course work before enrolling in Writing 140. See the Writing Program section on page xx.

Equivalency Examinations

Equivalency examinations are given at the discretion of the academic unit to determine whether upper division transferred course work may be applied as subject credit to the major requirements for the degree. Passing the examination does not provide additional unit credit. Contact the appropriate academic unit for specific details.

Subject Credit by Special Examination

Special examinations for subject credit establish subject credit in a subject area in which the student is sufficiently prepared but in which no previous credit has been accepted or attempted toward the USC degree.

Students who would like to request a waiver from the normal course requirements may request that the chair of the department in which the course is offered

allow them to take a special examination challenging the course for subject credit only. The fee for the examination is one half of a unit per examination.

With the permission of the dean of the academic unit in which the student is a degree candidate, the student may file a Request for Credit by Special Examination form in the Grade Department (Hubbard Hall 106). The following rules apply:

(1) Credit by special examination is available to undergraduate students only.

(2) No more than one special examination may be taken in a given course.

(3) Special examinations will not be allowed in any course for which a student has received an unsatisfactory grade or mark on the transcript (e.g., W, UW, IN, IX, F or D) at USC or elsewhere.

(4) A special examination will not be allowed if the course is a prerequisite to or sequentially precedes a course or courses that appear on a college level transcript, unless USC allows similar courses to be taken out of sequence.

(5) Credit cannot be earned by special examination for the writing requirement, the first three semesters of any foreign language or Mathematics 040x.

(6) Native speakers of a foreign language may challenge only literature or linguistics courses offered through the respective language department.

(7) Results of all special examinations taken for subject credit only will appear on the USC transcript with a grade of "CR" (credit) or "NC" (no credit) and will not reflect unit value.

Academic Standards

Definition of Grades

The following grades are used: A — excellent; B — good; C — fair in undergraduate courses and minimum passing in courses for graduate credit; D — minimum passing in undergraduate courses; F — failed. In addition, plus and minus grades may be used, with the exceptions of A plus, F plus and F minus. The grade of F indicates that the student failed at the end of the semester or was doing failing work and stopped attending the course after the twelfth week of the semester. Minimum passing grades are D- for undergraduate credit and C for graduate credit. Additional grades include: CR — credit (passing grade for non-letter-graded courses equivalent to C- quality or better for undergraduate courses and B (3.0) quality or better for graduate courses); NC — no credit (less than the equivalent of a C- for an undergraduate and a B for a graduate, non-letter-graded course); P — pass (passing grade equivalent to C- quality or better for undergraduate letter-graded courses and B (3.0) quality or better for graduate courses taken on a Pass/No Pass basis); NP — no pass (less than the equivalent of a C- for an undergraduate and a B (3.0) for a graduate, letter graded course taken on a Pass/No Pass basis).

The following marks are also used: W — withdrawn; IP — interim mark for a course exceeding one semester (failure to complete courses in which marks of IP [in progress] appear will be assigned grades of NC); UW — unofficial withdrawal (assigned to students who stopped attending prior to the drop deadline but failed to withdraw); MG — missing grade (an administrative mark used in cases when the instructor fails to submit a final course grade for a student); IN — incomplete (work not completed because of documented illness or some other emergency occurring after the twelfth week of the semester; arrangements for the IN and its completion should be initiated by the student and agreed to by the instructor prior to the final exam); IX — lapsed incomplete.

Grade Point Average Categories and Class Levels

A system of grade points is used to determine a student's grade point average. Grade points are assigned to grades as follows for each unit in the credit value of a course: A, 4 points; A-, 3.7 points; B+, 3.3 points; B, 3.0 points; B-, 2.7 points; C+, 2.3 points; C, 2 points; C-, 1.7 points; D+, 1.3 points; D, 1 point; D-, 0.7 points; F, 0 points; UW, 0 points; IX, 0 points. Wherever these letter grades appear in this catalogue or other university documents, they represent the numerical equivalents

listed above. Marks of CR, NC, P, NP, W, IP, MG and IN do not affect a student's grade point average.

There are four categories of class level: Undergraduate, Graduate, Law and Other. Undergraduate comprises freshman (less than 32 units earned); sophomore (32–63.9 units earned); junior (64–95.9 units earned) and senior (at least 96 units earned). Graduate comprises any course work attempted while pursuing a master's and/or doctoral degree. Law comprises any course work (offered by the USC Gould School of Law) attempted while pursuing a Juris Doctor or Master of Laws degree. Other comprises any course work attempted while not admitted to a degree program or course work not available for degree credit.

Grades of Incomplete (IN)

Conditions for Completing a Grade of Incomplete

If an IN is assigned as the student's grade, the instructor will fill out the Assignment of an Incomplete (IN) and Requirements for Completion form which will specify to the student and to the department the work remaining to be done, the procedures for its completion, the grade in the course to date and the weight to be assigned to the work remaining to be done when computing the final grade. A student may complete the IN by completing only the portion of required work not finished as a result of documented illness or emergency occurring after the twelfth week of the semester. Previously graded work may not be repeated for credit.

Time Limit for Completion of an Incomplete

One calendar year is allowed to complete an IN. Individual academic units may have more stringent policies regarding these time limits. If the IN is not completed within the designated time, the course is considered "lapsed," the grade is changed to an "IX" and will be calculated into the grade point average as 0 points. Courses offered on a Credit/No Credit basis or taken on a Pass/No Pass basis for which a mark of Incomplete is assigned will be lapsed with a mark of NC or NP and will not be calculated into the grade point average.

Extension of Time for Completion of an Incomplete

Completing the IN within the one-year period should be the student's highest priority. A student may petition the Committee on Academic Policies and Procedures (CAPP) for an extension of time for the completion of an IN. Extensions beyond the specified time limit are rarely approved if the student has enrolled in subsequent semesters.

In all cases, a petition for an extension of time for completion of an IN must have departmental approval and include a statement from the instructor explaining what is needed to complete the course and why the instructor feels the student should be given even further time for completion.

Missing Grades

Marks of MG must be resolved before a degree or certificate will be awarded. If a student wishes to graduate and chooses not to resolve the mark(s) of MG, the mark(s) will be defaulted to mark(s) of UW and will be calculated into the grade point average as 0 grade points.

Time Limit for Resolution of a Missing Grade

One calendar year is allowed to resolve an MG. If an MG is not resolved within one year, the grade is changed to UW and it will be calculated into the grade point average as 0 grade points. Courses offered on a Credit/No Credit basis or taken on a Pass/No Pass basis for which an MG was not resolved within one year will be changed to a mark of NC or NP and will not be calculated into the grade point average.

Courses offered on a Credit/No Credit basis or taken on a Pass/No Pass basis for which an MG was not resolved within one year will be changed to a mark of NC or NP and will not be calculated into the grade point average.

Correction of Grades

A grade once reported to the Office of Academic Records and Registrar may not be changed except by request of the faculty member to the Committee on Academic Policies and Procedures on a Correction of Grade form. Changes should be requested only on the basis of an actual error in assigning the original grade, not on the basis of a request by the student or special consideration for an individual student. Students are not permitted to complete course work after the semester has ended.

Disputing a Grade

The instructor's evaluation of the performance of each individual student is the final basis for assigning grades. Through orderly appeal procedures, students have protection against prejudiced or capricious academic evaluation. See the student guidebook *SCampus* for details of the procedure.

Academic Dishonesty Sanctions

When a student is found responsible for a violation of the USC Student Conduct Code standards pertaining to academic dishonesty, the Vice President for Student Affairs (or designee) will inform the Office of Academic Records and Registrar. In appropriate cases, the Office of Academic Records and Registrar will post the sanction information on the student's academic records. Disciplinary sanctions noted on student records include suspension and expulsion from the university and revocation of admission and degree. Disciplinary grade sanctions (e.g., F in course) are not distinguished on a student's transcript from marks assigned for academic work accomplished. In cases of suspension or expulsion, the student's registration for the current term may be cancelled with marks of "W." More information can be found in *SCampus* in the University Governance section.

Repeated Course Work at USC

Under certain conditions, a student may repeat a course for grade point credit. In no case will additional unit credit be allowed for repeated courses or duplicated work. No student may repeat a course for grade point credit in which a grade of B- or better was received. A prerequisite course may not be repeated after a student has completed a course for which it is designated a prerequisite. (See prerequisites on page xx.)

Undergraduate students who want to repeat a course in which a grade of C+, C or C- was received and have the subsequent grade calculated in the grade point average must petition the Committee on Academic Policies and Procedures (CAPP) for permission to do so prior to re-registering in the course. *Post hoc* approval will not be granted.

Graduate students may repeat a course in which a grade of C- or below was received, but both grades will be calculated in the grade point average. Graduate students who want to repeat a course in which a grade of C+ or C was received and have the subsequent grade calculated in the grade point average must petition the Committee on Academic Policies and Procedures (CAPP) for permission to do so prior to re-registering in the course. *Post hoc* approval will not be granted.

A special provision governs the repeat of courses by students who enter USC as first-time freshmen. These students may repeat a maximum of three courses taken during the first two semesters at USC in which grades of D+ or below (including UW and IX) were received, and only the subsequent letter grade, even if lower, will be calculated in the grade point average. The courses must be repeated at USC for a letter grade, and both courses with the grades received will appear on the transcript. The same course may be repeated no more than once for the benefit of substitution of grade. Students must notify the Degree Progress Department if they wish to utilize this provision. Students who have been assigned a grade as a result of a Student Conduct sanction may not repeat the course under this provision. Students who were admitted for spring and were first-time freshmen elsewhere in the previous fall may repeat a maximum of two courses taken during the first semester at USC in which grades of D+ or below were received with the same set of provisions stated above. An exception is the case in which a student earns a grade of C- in a course for which a grade of C or higher is required for application to major or minor requirements. In this case

the subsequent grade will be calculated in the grade point average without the requirement of a petition.

Excessive Withdrawals (Marks of W)

An undergraduate student who withdraws (a mark of W) from at least 8 units in one semester or from at least 16 units overall must undergo mandatory academic advisement before the student can enroll in a subsequent semester. A restriction enforces this requirement. A student must have his or her academic adviser remove the restriction. This is a one-time requirement. Students will not be denied registration in future terms once advisement has taken place. This advisement is intended to provide students with information and guidance on the negative consequences that excessive withdrawals have on successful and timely completion of degree programs.

The Dean's List

Any undergraduate student who earns a grade point average of 3.5 or higher on 12 units or more of letter-graded course work in any one semester is placed on the Dean's List for that semester. Grades of IN must be removed before eligibility is determined for that semester. Academic transcripts do not carry the Dean's List notation.

Class Rank

The University of Southern California does not calculate or support a class rank for its undergraduate students. While most graduate programs do not rank students, requests for graduate student class rankings should be directed to the dean of the particular school in which the graduate degree was earned.

Student Good Standing

Students are considered to be in good academic standing if they are eligible to register for classes. Disciplinary good standing is determined by the office of Student Judicial Affairs and Community Standards.

Probation and Disqualification of Undergraduate Students

An overall USC grade point average (GPA) of at least C (2.0) on course work taken at USC is required for completion of undergraduate degrees.

Academic Probation

A student whose overall USC GPA falls below 2.0 is placed on academic probation. Continued enrollment requires clearance from a counselor in the Office of Academic Review and Retention. Actions such as Corrections of Grades, Completion of Incompletes, Removal of Missing Grades and Exceptions Requests will not result in academic statuses being retroactively changed.

Mandatory Advisement

A student whose overall GPA falls below 2.0 is required to seek academic advisement prior to course selection each semester. Proof of advisement must be filed with the Office of Academic Review and Retention before any registration request will be processed. The Office of Academic Review and Retention will only accept an official Academic Review Advisement Record form with an authorized school signature as proof of advisement. This form may be obtained in Trojan Hall 101.

Academic Disqualification

Students on academic probation who do not raise their overall GPA to 2.0 after two semesters of enrollment, exempting summer enrollment, will be academically disqualified. However, if a student earns a minimum semester GPA of 2.3 in the second or any subsequent probation semester but has not yet reached the overall 2.0 GPA, the student will not be disqualified and will be allowed to enroll for an additional semester.

Readmission after Academic Disqualification

Petitions for readmission after academic disqualification are initiated by the student through the Office of Academic Review and Retention. Completion of approved course work from another institution is a requirement for petitioning for readmission. Disqualified students must meet with a counselor from the Office of Academic Review and Retention before enrolling in courses at another institution. The counselor will provide the Readmission Pre-Approval Form on which both the Office of Academic Review and Retention and the student's academic department must sign approval.

Before petitioning for readmission, a disqualified student must complete a minimum of 12 semester units of pre-approved, transferable course work applicable to USC degree requirements with a minimum 3.0 GPA. As readmission to the university is never guaranteed, any indication of strong academic performance beyond the 12 units required would strengthen a readmission petition. All grade issues at USC (IN, MG, etc.) must be resolved prior to submission of a readmission petition.

Students must petition for readmission by December 30 for spring semester, by May 1 for summer session and by August 15 for fall semester. Since a student's readmission petition must be reviewed and approved by CAPP before he or she can register, under no circumstances will a petition be accepted after the deadline. A non-refundable fee of \$50 must accompany the readmission petition.

Academic Warning and Dismissal of Graduate Students

Faculty advisers and departments take factors other than satisfactory grades and adequate GPAs into consideration in determining a student's qualifications for an advanced degree. A student's overall academic performance, specific skills and aptitudes, and faculty evaluations will be considered in departmental decisions regarding a student's continuation in a master's or doctoral degree program.

Satisfactory progress toward an advanced degree as determined by the faculty is required at all times. Students who fail to make satisfactory progress will be informed by their department or committee chair or school dean. The faculty has the right to recommend at any time after written warning that a student be dismissed from a graduate program for academic reasons or that a student be denied readmission. Procedures on disputed academic evaluations are described in *SCampus*.

Ethics Guidelines for Graduate Study

As participants in an enterprise that depends on academic freedom and integrity, faculty members and graduate students have a special obligation to promote conditions that maintain free inquiry and the

highest standards of integrity. USC faculty have developed guidelines to serve as a resource for students finding their way through the often complex academic relationships of a major research university. These guidelines for ethical faculty and graduate student relations are available from the Graduate School.

Research Involving Human Subjects

Graduate student researchers are required to obtain approval from the USC Institutional Review Boards whenever research, whether funded or unfunded, involving

human subjects is proposed. The Institutional Review Boards (IRBs) are fully authorized to review all proposals and projects which involve the use of human subjects. "Human subject" means a living individual about whom an investigator conducting research obtains (a) data through intervention or interaction with the individual or (b) identifiable private information. The university IRBs have been established to meet federal regulations. The IRBs are required to assure that: (1) research methods are appropriate to the objectives of the research; (2) research methods are the safest, consistent with

sound research design; (3) risks are justified in terms of related benefits to the subjects; (4) subjects' privacy is protected; (5) subjects participate willingly and knowingly to the extent possible; and (6) research projects are "monitored" by the IRBs.

Language of Instruction

English is the language of instruction at USC. All courses are taught in English with the exception of a few advanced language courses.

Exception Procedures

Exceptions to particular university regulations and degree requirements will be considered only if there is no prohibition stated in this catalogue. Where exceptions are specifically prohibited, none will be granted. A student who wants an individual exception must follow the procedure specified in this catalogue for the particular regulation or requirement. If no procedure is specified, it may still be possible to request an exception. Such exceptions, however, are rarely granted.

Requests for exception to established university academic regulations or procedures are generally heard by: (1) the Committee on Academic Policies and Procedures (CAPP); (2) the dean of the academic unit in which the student is seeking a degree; or (3) the dean or director of the office responsible for administering the policy. Requests for credit for courses taken out of sequence are heard by the dean of the academic unit offering the course that was taken out of sequence. Students who wish to request an exception should first consult an academic adviser about the appropriate process to follow.

While the university is sensitive to the educational advantages of a flexible curriculum, it is also conscious of a responsibility to ensure equity for all students. Permission to deviate from published regulations is neither automatic nor *pro forma*; each request is considered on its own merits and in light of the petitioner's complete academic record.

USC Committee on Academic Policies and Procedures

The Committee on Academic Policies and Procedures (CAPP), a representative group of faculty, students and administrators, reviews or delegates the review of most general petitions. CAPP studies the effects of university academic requirements, regulations and policies; recommends improved student academic policies and procedures; and regularizes policies and procedures so that the number of petitions can be reduced. As part of this charge, CAPP has specific responsibility for oversight and review of the University Policy on Accommodations for Students with Disabilities. CAPP also rules through Academic Petitions Committees on requests for

exceptions to academic regulations and requirements printed in the University Catalogue. In most instances, the Academic Petitions Committee acts as the body with original jurisdiction, but in some cases delegates authority for approvals to another.

The assumptions and procedures which guide Academic Petition Committee actions are the following:

- The student is responsible for complying with deadlines established in the academic calendar.
- All academic work should be accurately reflected in the student's record. The record is to be faithful to the actual experience. Cosmetic corrections or adjustments are not sanctioned.
- Care must be taken not to establish the petition process as an alternative to being held to the adopted academic requirements.
- Decisions should be focused on the academic basis for petition, rather than the consequences (real or imagined) that may face the student.
- Registration and enrollment related petitions are presented by the registrar's staff.
- Academic petitions are presented by a representative of the student's school.
- The Committee on Academic Policies and Procedures receives reports from the degree progress department, the Office of Academic Review and retention and the Academic Petitions Committee.
- The committee reports to the office of the president through the provost.

Registration-related Exceptions

Requests for exception to published registration procedures and enrollment deadlines are heard by the Dean of Academic Records and Registrar. Such requests are generated in the Academic Review Department, Trojan Hall 101. Requests that are not approved by the dean are referred to a CAPP panel for review.

Any request to change the official registration for a semester retroactively must be submitted within 24 months of the end of the semester in question. The 24-month period starts with the last day of final examinations for the semester in question. If appropriate, the

time limit can be waived by the dean of the academic unit in which the student is seeking a degree for a period not to exceed a total of five years. Deans may not request waivers of the two-year time limit rule if the course(s) in question occurred longer than five years previously.

General Education Petitions

Students may petition to waive individual general education requirements or apply one or more courses not listed in the *USC Catalogue* toward general education requirements. If the course or courses to be substituted was or will be taken at USC, a General Petition may be initiated in the student's home department; if the course was taken at another institution, an Articulation Petition may be initiated at usc.edu/OASIS. See Transfer Credit on page xx.

Degree Requirement-related Exceptions

Requests for exception to specific degree requirements are generated in the academic unit. Most requests will be forwarded by the adviser to CAPP for review. Some exceptions are made by the dean of the academic unit and are recorded on the Student Academic Record System (STARS) report by the academic department, using the exception process.

The Graduate School

Requests for an exception to the policies and procedures governing Graduate School degree programs will be considered upon submission of a general petition to the Graduate School stating the specific request, supported by adequate reasons and information. The signatures and recommendations of the faculty adviser or committee chair and department chair are required.

Graduate and Professional Programs

Requests for exception to the policies and procedures governing graduate degree programs that do not fall under the jurisdiction of the Graduate School should be directed to the dean of the degree-conferring unit.

Tuition and Fees

Tuition and Fees (Estimated), Fall 2013

Tuition is payable in advance unless special arrangements are made for deferred payments as described below. Tuition is the same for resident and nonresident students. Registration is completed when the bill has been settled.

Auditors pay the regular tuition rate. Auditors are not required to participate in class exercises (discussions and examinations); they receive no grades or credit and there is no transcript notation of courses taken for audit. An instructor, dean or university officer may give permission to an individual to attend a class as a guest. Otherwise, attendance in class is limited to enrolled students.

These fees are based upon current information available at the time of publication and are subject to possible later change. The university reserves the right to change without notice any of the terms stated herein.

The number of units for which tuition is charged is indicated by the number in parentheses after the title of each course listed under Courses of Instruction.

Tuition (semester), (Estimated)

Undergraduate Students	
(12–18 units)	\$22,801.00
unit basis	1,536.00
Graduate Students	
(15–18 units)	22,801.00
unit basis	1,536.00
Advanced Dentistry (per trimester)	26,223.00
Dentistry (per trimester)	
Session 006	25,944.00
Dental Hygiene (per trimester)	
Session 007	21,132.00
Special Dental International Students	
(per trimester) Session 008	25,944.00
Engineering Graduate units	
(500 level and above)	
unit basis	1,636.00
Law Session 002	
flat fee basis (13–17 units)	26,407.00
unit basis	2,041.00
Medicine Session 003	
flat fee basis	26,204.00
Master of Physician Assistant Practice	
flat fee basis	22,801.00

Pharmacy Session 004, 005	
flat fee basis (15–18 units)	23,431.00
unit basis	1,561.00
Graduate Cinema Session 037	
unit basis (no flat fee)	1,634.00
Business Graduate (500-level and above)	
unit basis	1,576.00
Doctor of Physical Therapy	
full year for year 1 and 2 students	56,252.00
partial year for year 3 students	33,986.00
Master of Real Estate Development	
Session 038	
flat fee basis (16–18 units)	27,248.00
unit basis	1,703.00

Mandatory Fees (Estimated)

Application Fee, undergraduate	
(not refundable)	80.00
Application Fee, graduate applicants	
(not refundable)*	85.00
Application Fee, Marshall graduate applicants	
(not refundable)	150.00
Commitment Deposit, freshman and transfer only (not refundable but applicable to tuition and fees)	300.00
Commitment Deposit, graduate and professional (not refundable but applicable to tuition and fees):	
Students should consult their academic department or school.	
Orientation Fee	
New Student Orientation Publications and Programs Fee (undergraduate)	350.00
New Student Orientation Publications and Programs Fee (graduate)	35.00
Student Health Service, per semester (for students with load of six units or more)	262.00
Summer, \$17 per week, 12-week maximum	204.00
Student Programming Fee, per semester (for students with load of six units or more)	
undergraduate	57.50
graduate	37.50
Student Services Fee, per semester	
undergraduate	20.50
graduate	12.50

Norman H. Topping Student Aid Fund, per semester, all students	8.00
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Student Health Insurance

Fall semester**	605.00
Spring semester and summer session**	914.00
Dental insurance (optional) per year**	136.00
See page xx.	

**Some academic programs have a higher application fee, which is noted on the application.*

***Students who are registered for classes at off-campus locations (i.e., Skirball Center or Orange County) will follow a different health plan structure. Please see the 2013–2014 plan description for a listing of those rates, as well as the available dependent rates.*

Special Fees (Estimated)

Parking Fee, per semester (10% city parking tax included) For more details, please visit our Website at usc.edu/parking .	
Commuter	
Gold (On-Campus, PS1 and PS2, HSC)	414.00
Rideshare 2 person carpool Gold	301.50
Cardinal (Lots 71 and SSP - HSC)	301.50
Rideshare 2 person carpool Cardinal	238.50
Parking Center	301.50
North Off-Campus Residents	274.50
Daily (first-come, first-served basis)	
Meter (hourly)	2.00
On Campus (all day)	10.00
Parking Center (all day)	8.00
Parking Center (hourly)	2.00
Motorcycle	58.50
Evening permit (5 p.m.–7 a.m. only M–Su)	184.50
Deferment Service Charge	
Thirty day deferments are granted for up to \$2,000.00 of the tuition balance. There is a non-refundable service charge of five percent of the deferred amount, due at the time the deferment is granted, in addition to the remaining billing balance.	
Enrollment Verification Fee	5.00
Petition Processing Fee for Registration	
Exceptions	150.00

Student Identification Card (USCard)	
Replacement with mag stripe.....	25.00
Replacement with Prox contactless.....	25.00
Required of all students. Students must be registered before a card is issued.	
The fee may be assessed for each replacement of identification card.	
Laboratory Fees	5.00–500.00
For certain laboratory courses in architecture, biological sciences, chemistry, engineering, fine arts, geological sciences, physical education and physics. These fees are variable, and students should consult the current <i>Schedule of Classes</i> for amount of individual fees.	
Dissertation Fee	115.00
For ProQuest/UMI, USC Libraries and Graduate School processing of doctoral dissertation and publishing abstract.	
Thesis Fee	105.00
For ProQuest/UMI, USC Libraries and Graduate School processing of master's thesis and publishing abstract.	
Application for re-entry	no charge
Special Subject Examination	
(one-half per-unit rate regardless of units per course)	768.00
Transcript Fee	
Official	10.00
Academic Record Summary	5.00
Late articulation petition fee	100.00
Prior degree verification (international)	75.00
Articulation of international undergraduate transfer credit	200.00

Late Registration and Late Settlement Fees

First week.....	100.00
Second week.....	100.00
Third week	100.00
Registration is not permitted after the third week of classes.	

The university currently assesses a monthly finance charge on all past due balances. The current annual rate is 12 percent, subject to change.

A "returned check charge" of \$25 is assessed for a check or e-check returned by the bank for any reason. Under California Civil Code #1719, a returned check may create liability for treble (three times) the amount owed, but not less than \$100.

Obligation for Payment

Request for registration constitutes a legal financial obligation to which students will be held liable if they do not follow the proper procedure to change or cancel their registration through the Office of Academic Records and Registrar. They must receive written confirmation (the Registration Confirmation form) to verify that their requested change has been made.

By registering, students agree to be held responsible for all tuition and fees, including, but not limited to, payments denied by student loan lenders, agencies of the United States government, and agencies of foreign governments.

Tuition and fees for all students, including those whose tuition has been deferred, become an obligation in accordance with the provisions of the Withdrawal Refund Policy as follows: Tuition and fees are due, in full, by the settlement deadline. Failure to make payments of any indebtedness to the university when due, including but not limited to tuition, deferred tuition, housing, student loans, lab fees and USCard, is considered sufficient cause, until the debt is settled with the university to (1) bar the student from classes and examinations; (2) withhold diploma, scholastic certificate or transcripts; (3) bar the student from university housing; (4) suspend all university services and privileges; (5) suspend the student; (6) assign the student to a collection agency (students who have been assigned to an outside collection agency may be required to pay in advance for all future registrations and services); and (7) report the student to a credit bureau. This policy will be equally enforced against debts discharged through bankruptcy.

Permission to cancel enrollment does not constitute, nor shall it be construed as, a waiver by the university of a student's financial obligation. Students are still responsible for all outstanding debts and contracts with the university. Furthermore, a student must not have any delinquent financial obligations to USC at the time classes begin or his or her registration may be revoked.

For additional information please contact the Cashier's Office, Student Union 106 (STU 106), (213) 740-7471.

Methods of Payment

You may pay your bill via the Internet (USCe.pay), by mail or in person. If you are paying by mail, please follow the instructions on your monthly billing statement. Be sure to mail your payment early enough for the university to receive it by the settlement deadline.

USCe.pay allows you to manage your student account online. You can pay your tuition and fees by transferring funds from your savings or checking account, or by charging to your VISA, MasterCard or Discover card. You can also print e-receipts and view your billing statements or current account information. In addition, you can set up individual guest user access for parents or anyone else you choose so they can make payments on your account. For more information or to login to your account, view usc.edu/epay.

In fall and spring semesters, USC offers a monthly payment plan. An application must be made each term after the student has registered for classes but before the settlement deadline.

More detailed information about student accounts, settlement options and procedures is available at usc.edu/sfs.

VISA/MasterCard and Discover Card

You should present the credit card (and parent's written authorization if the card is not in your name), as well as a valid driver's license. Presentation of any credit card does not constitute payment of tuition and fees. Authorization must be obtained from the credit card institution in order to be posted to the student account. Declined authorizations are your responsibility. See Late Fees and Billing Information.

Bank Cards (Visa/MasterCard, Discover Cards)

Credit cards must be used by the authorized signer on the bank card used for payment toward the university student account. If a bank card transaction is disallowed by the bank, the student account will be subject to the "Returned Item" penalties in accordance with the returned item policy.

Cashier's Short Term Deferment

Thirty day deferments are granted for up to \$2,000 of the tuition balance. You must take three or more units (or the equivalent) to receive any type of deferment. There is a non-refundable service charge of five percent of the deferred amount, due at the time the deferment is granted, in addition to the remaining billing balance.

The number of units for which tuition is charged is generally the same as the number of academic units indicated after each course in the *Schedule of Classes*.

However, some courses with no academic credit require payment of tuition. Most classes with course numbers ending in z (e.g., 594z and 794z) require 2 units of tuition. GRSC 800 and GRSC 810 each require 1 unit of tuition.

In sessions offering different tuition rates or mandatory fees for undergraduate and graduate students, the student's Program of Study (POST) will determine the tuition rate and fees to be charged. Students with more than one active post will be charged as undergraduate students if at least one POST is designated as undergraduate.

Financial Aid

Financial aid recipients will have most of their available financial aid (such as scholarships, grants, loans, and graduate assistantship tuition awards) applied to their university account each semester as direct credits against their total charges. Federal and state funds, such as the Pell Grants, Supplemental Educational Opportunity Grants, Cal Grants, Direct Stafford Loans, Direct PLUS Loans and Perkins Loans, are applied to student accounts no sooner than 10 days before the beginning of the fall and spring semesters. During the summer, federal aid is applied to student accounts no sooner than the first day of the earliest session of enrollment. Students must complete all application steps and meet all disbursement requirements before funds will be applied to their accounts. For details, visit usc.edu/financialaid.

Federal Work-Study awards are not reflected as credits on a student's account. Federal Work-Study awards are earned through employment, either on-campus or with an approved off-campus employer. The student is paid by check or direct deposit bi-weekly for hours worked and may earn up to the amount of the Federal Work-Study award.

Billing Information

Monthly billing notifications on all active student accounts are emailed to the student's official USC email address (ends in @usc.edu) and to their designated guest users. USC does not mail printed statements to currently enrolled students.

In accordance with the Family Educational Rights and Privacy Act, university representatives will not disclose any specific information about a student's account to any third party (including family members) without

the student's permission. Information about granting permission is available on the Student Financial Services Website's FAQs for parents and sponsors (usc.edu/sfs).

Although the university will accept payments from a third party, the student is responsible for settling all debts to the university by the appropriate deadlines.

Refund of Tuition

Tuition is refundable entirely at the discretion of the university. Refunds will be computed as of the date on which a student cancels or drops a course through the Registration Department. Request for a refund must be made to the Cashier's Office.

Full (100 percent) refunds for the regular/general 12- to 15-week fall or spring session are made through the end of the third week of classes (the refund deadline). No refunds are issued for classes canceled after the deadline.

If you are enrolled in any other fall or spring session, or if you are enrolled in the summer, a different refund deadline may apply. See the academic department for specific information.

Students who are recipients of Title IV federal financial aid funds (Federal ACG Grant, Pell Grant, SMART Grant, SEOG, Direct Stafford Loan, Direct PLUS Loan, Perkins Loan) and who withdraw from all classes after the refund deadline, may be required to return any "unearned" Title IV federal financial aid, even if they are not entitled to a refund of tuition. Refer to Withdrawal Implications for Recipients of Financial Aid on page xx for more information.

Tuition Refund Insurance

Elective insurance is available that provides full coverage for tuition and mandatory fees if students suffer serious illnesses or accidents that necessitate leaving the university before the semester is completed. The Tuition Refund Plan is offered through a private insurance carrier, Dewars, Inc. You must choose to accept or opt out of this plan the first time you register for each term. If you accept the plan, the charge is added to your student account. Further information is available from the Cashier's Office, the Registration Department and at usc.edu/dept/finsev/sfs/acct-refs-mwr.htm. See page xx for additional information.

Exit Loan Counseling

All students who borrowed a Federal Direct Stafford Loan or Federal Direct Graduate PLUS Loan must complete exit loan counseling when they cease to be enrolled at least half time. Exit loan counseling is a two-part requirement for borrowers of Federal Direct Stafford and/or Federal Direct Graduate PLUS loans. First, a borrower must complete online exit loan counseling at nslds.gov. The process takes about 20 minutes and requires students to update their contact information with the U.S. Department of Education. Second, a borrower must also participate in an in-person exit loan counseling information session or an exit loan counseling webinar. Information about the webinar and the schedule for in-person exit loan counseling are available online at usc.edu/financialaid at the end of each semester.

Students who have borrowed a Federal Perkins Loan, Health Professions Student Loan, Loan for Disadvantaged Students, Primary Care Loan or any institutional loan, must complete an online session at usc.edu/sfs

(click on Financial Counselor). Diplomas and transcripts will not be released if the student does not complete this step.

Exit Counseling for TEACH Grant Recipients

Students who received a TEACH grant must also complete exit counseling when they withdraw from the university or graduate. The TEACH grant exit counseling session can be completed online at nslds.ed.gov.

Tuition Assistance Benefits

The Tuition Assistance Benefits program provides USC tuition payments for eligible faculty and staff and their spouses or registered domestic partners and children. The amount of tuition payment varies based on who is taking the class, the type of class and the maximum number of units eligible for assistance. Tuition assistance is limited to tuition, and does not apply to any fees or books.

Tuition assistance eligibility does not guarantee the student admission to the university. The prospective student must apply for university admission through the USC Admission Office.

Only those USC classes for which a student may register and receive a registration confirmation are eligible for Tuition Assistance Benefits. Special education programs, seminars and other classes not listed in the *USC Catalogue* are not eligible for tuition remission.

An employee must be employed by the university in a tuition-benefits-eligible position on or before the first day of classes in the semester for which application is made. Please note that the "first day of classes" refers to the first day classes are in session for the semester, not the first day the specific class in which the student is enrolled meets. Conversely, the "end of the semester," refers to the last day classes are in session for the semester, not the last day the specific class in which the student is enrolled meets. This includes the summer semester, which has different "sessions" but still has very specific semester start and end dates (see Academic Calendar). A student who receives tuition assistance is responsible for payment of a prorated amount of tuition assistance if certain changes in employment status of the employee or sponsoring employee occur during the semester. See the Tuition Assistance Benefits Policy available online at usc.edu/benefits for complete information about eligibility and requirements. General information about the tax liability for certain types of tuition assistance is included in the policy. For additional information, contact the Benefits Office on the University Park Campus. Application forms for tuition assistance may be found on the Benefits Website at usc.edu/benefits by clicking the icon "Forms" and then "Tuition Assistance Application Forms."

Cancellations

Defined as complete withdrawal from the semester or session, cancellation refunds are computed based on the date the application to cancel enrollment is presented to the Registration Department.

Drops

Drops are defined as withdrawal from one class or part of registration. The refund schedule applies as of the date the drop is processed by the Registration Department.

This policy is enforced equally for settled and unsettled registrations.

Financing Alternatives

Tuition Prepayment Program (TPP)

This option offers individuals the opportunity to stabilize tuition costs by avoiding future tuition increases. Under this plan, the university will accept the prepayment of the student's total USC tuition plus mandatory fees at the current tuition rate for up to the next four or five years. The student must be admitted to the university before establishing a tuition prepayment account. For further information, contact Student Financial Services, (213) 740-4077.

USC Payment Plan

The USC Payment Plan, administered by Student Financial Services, enables students and parents to pay tuition, fees and university housing and meal plan charges in monthly installments rather than in a single payment at the beginning of each semester. Payments are made over a five-month period for each semester, beginning August 1 for the fall semester and January 1 for the spring semester, and may be made only by electronic transfer. There is a small application fee each semester. The student must be in good financial standing at the university. For further information, contact Student Financial Services, (213) 740-4077. You may also access the Website at usc.edu/sfs/payplan.

Private and Federal Financing

USC participates in a number of long-term financing options that are available to all families regardless of eligibility for scholarships or financial aid. These programs can relieve students' and families' cash-flow restrictions and enable them to meet their expected contributions for the cost of college education. Information about loan programs is available online at usc.edu/finaid or at the USC Financial Aid Office.

Student Health Insurance

USC student health insurance plan coverage periods:

- Fall coverage: August 19, 2013 through January 12, 2014
- Spring/Summer coverage: January 13, 2014 through August 17, 2014

Premiums for the 2013–14 academic year may be obtained by visiting the USC Engemann Student Health Center's Website (usc.edu/engemann) and selecting "student health insurance." The university requires that all students have supplemental health insurance to help cover the cost of health care that cannot be obtained at the health center, especially in emergency situations where hospitalization may be required.

All domestic students carrying 6 units or more will be automatically enrolled in the USC student health insurance plan. Some class registration codes, for example Special Tuition programs, do not generate this automatic charge. All students are required to review their fee bill after registering for classes and if the automatic insurance charge does not appear, must contact the insurance office by the drop/add date to enroll in this plan if they wish to continue coverage for the semester. Domestic students carrying less than 6 units or

who drop classes before the drop/add date resulting in enrollment in less than 6 units, must enroll themselves in the plan by the drop/add date if they wish to continue coverage for the semester. All international and/or health sciences students are automatically enrolled in the USC student health insurance plan regardless of the number of units in which they are enrolled. Distance Education students studying remotely must contact the USC Student Health Insurance Office for current eligibility information no later than the drop/add date at the beginning of each semester.

The USC student health insurance plan works in conjunction with the university's student health centers. All students enrolled in the USC student health insurance plan are assessed the student health center fee and are required to access their primary care at the student health center on their campus. Referrals are required in order to see providers outside the student health centers for non-emergency situations.

Waiver Requirements

Enrollment in the USC student health plan will only be waived and the premium charge removed from the fee bill if documented proof of health coverage from another plan is presented using the online waiver application by the deadline date of September 6, 2013. In order to receive a waiver of the USC student health insurance, the insurance presented must meet all the following requirements:

Criteria:

- Must provide at least \$500,000 in lifetime aggregate coverage (no per incident maximums)
- Policy must have no major exclusions — pharmacy coverage, mental health coverage and maternity coverage (female students) are required
- Must have effective dates covering the entire semester for which the waiver is requested (verification may be requested by the USC student health insurance office)
- Must have a policy year deductible of \$2,500 or less
- Must pay for at least 70% of all covered expenses to providers in the Los Angeles area. Emergency coverage only in Los Angeles is not accepted for waiver.
- Maximum out-of-pocket expense on the policy (deductible plus out-of-pocket maximum) must not exceed \$7,500
- Identification card or policy with student name listed and/or policy information allowing USC to confirm eligibility must be provided
- Plan documents must be in English with currency amounts converted to U.S. dollars and an insurance company contact phone number and claims address in the U.S. must be provided

The waiver must be submitted using the online waiver request program by September 6, 2013. Login is through OASIS.

For more information, email the Student Health Insurance Office at b.well@usc.edu or call (213) 740-0551.

Graduate Assistants

Graduate assistants with a .25 award or higher and Ph.D. students may be eligible to have USC pay for the USC

student health plan and the USC Student Health Center fee. Their assistantship award must show in the student financial detail system. More information is available in the student's award packet through his or her academic department.

Student Health Insurance for Students Studying Overseas

Students enrolled in overseas study programs are required to have USC health insurance coverage. These students are automatically enrolled in the USC overseas studies health insurance plan unless they are enrolled in the USC health plan. For more information, please email the Student Insurance Office at b.well@usc.edu or call (213) 740-0551.

Student Dental Plan (Optional)

Dental coverage for students is available for purchase and billed to the student's account. Dental coverage is not automatic. The coverage period is August 19, 2013–August 17, 2014. Dependent coverage will also be available at a separate premium rate. Coverage is for the entire year and must be purchased by the deadline of September 6, 2013. Spring enrollment will only be allowed for new incoming students in the spring semester. Plan details are available at usc.edu/engemann.

Veterans' Benefits

Veterans must register with the Office of Veteran Affairs each semester in order to receive benefits. Students may expect an educational allowance based only on courses that are a legitimate part of the degree program approved for veterans. The student must notify the Office of Veteran Affairs immediately upon any change in unit load or change of major. The office is located in John Hubbard Hall 114, (213) 740-4619, (213) 821-3760 FAX. Office hours are 8:30 a.m. to 5 p.m. Monday–Friday or contact vets@usc.edu.

For more information, visit our Website at usc.edu/va, stop by the office, or call (213) 740-4619.

Students may visit gibill.va.gov for more information regarding the GI Bill Educational Assistance.

Naval ROTC (NROTC)

The Department of Naval Science offers courses for all undergraduate students, although the courses are structured primarily for those who are participating in the Naval Reserve Officers Training Corps (NROTC). This program eventually leads to a commission as an officer in the United States Navy or the United States Marine Corps. Most NROTC midshipmen at USC are the recipients of four-year scholarships earned through national competition while seniors in high school. These grants pay full tuition, fees, a book stipend and a \$250 to \$400 monthly subsistence stipend to help defray living expenses. The university also provides an additional automatic scholarship of \$4,000 per year for each NROTC scholarship recipient to help pay for living expenses. Navy/Marine Corps scholarships are also available on a competition basis to students who enroll directly in the NROTC college program at the university. College program students receive no NROTC financial aid until they are selected for a scholarship. College program students who are not selected for a scholarship may

apply for advanced standing status during their sophomore year which enables them to continue in the program and makes them eligible to receive a subsistence stipend beginning in their junior year. Upon completion of the bachelor's degree and NROTC requirements, students are commissioned as active duty Ensigns in the U.S. Navy or as Second Lieutenants in the U.S. Marine Corps, and proceed to advanced training in the Navy Officer communities of aviation, submarines, surface ships, special warfare, special operations and medical/dental or Marine Corps Military Occupational specialties such as aviation, infantry, intelligence, artillery, etc. For specific information, contact the Department of Naval Science at (213) 740-2663 or visit usc.edu/dept/nrotc/.

Air Force Reserve Officers' Training Corps (AFROTC)

AFROTC offers a variety of scholarships, many of which pay the full cost of tuition, books and fees. Successful completion of AFROTC academic classes and leadership laboratories leads to a commission as a second lieutenant in the United States Air Force. The program is open to most students pursuing a baccalaureate degree. Classes consist of one hour of academics and two hours of laboratory for freshmen and sophomores; three hours of academics and two hours of laboratory for juniors and seniors. AFROTC cadets under scholarship and all juniors and seniors receive a monthly tax-free stipend and a textbook allowance. USC also offers a matching \$4,000 scholarship per year for all AFROTC scholarship recipients. For more information, contact the Department of Aerospace Studies (AFROTC) at (213) 740-2670 or visit the Physical Education building 112 or usc.edu/dept/afrotc.

Army Reserve Officers' Training Corps (AROTC)

Army ROTC is one of the most demanding and successful leadership programs in the country. The training a student receives in Army ROTC teaches leadership development, military skills and career training. Courses take place both in the classroom and in the field, and are mixed with normal academic studies. Students may also attend additional summer programs, such as Airborne School. Upon completion, an Army ROTC graduate is awarded officer status as a second lieutenant in the U.S. Army. The USC Army ROTC program has a limited number of full-tuition scholarships for full-time undergraduate and graduate students. Scholarships are offered on a competitive basis to all qualified applicants and are not based on financial need. Students (cadets) will have the option of active duty, U.S. Army Reserve or National Guard duty. All cadets receive a monthly stipend based on the cadet's academic year and a book stipend per semester. All enrolled cadets receive uniforms, military science textbooks and any other required items from the department. Students may select any major offered by the university. Prior to the completion of their degree and commissioning, students will choose from the 17 different career fields (branches) the U.S. Army has to offer. Veterans, Reservists and National Guard members and AROTC graduates qualify for advanced placement. For further information, visit the Army ROTC office located in the Physical Education building 115A, call (213) 740-1850 or visit the Website at uscarmyrotc.org.

Undergraduate Education

Admission

Office of Admission and Financial Aid (213) 740-1111

Admission to undergraduate programs is granted by the USC Office of Admission. This office receives and processes all applications, evaluates credentials, and mails letters of acceptance to applicants who qualify for entrance. Admission to the university's degree programs must be granted in all cases by the USC Office of Admission and the appropriate selection committees. Only a letter from the Office of Admission grants official admission.

As a private university, USC seeks a wide geographical distribution among its student body, and evaluates its out-of-state applicants using the same criteria as those used for California residents. Tuition and fees are the same for all students, regardless of state or country of residence.

The University of Southern California admits qualified men and women as students regardless of race, color, religion, gender, national origin, age, handicap, sexual orientation or status as a disabled veteran. After admission, students are accorded equal rights to participate in all university-sponsored programs and activities. The university does not discriminate on the basis of race, color, religion, gender, national origin, age, handicap, sexual orientation or status as a disabled veteran in the administration of its educational policies, scholarship and loan programs, athletics and other student activities.

Applicants with Disabilities

In compliance with the Rehabilitation Act (Section 504) and the Americans with Disabilities Act Amendments Act (ADAAA), USC offers equal access to its degree programs to academically qualified applicants with documented disabilities. Applicants will be expected to have demonstrated by their record in a college preparatory high school curriculum or in an appropriate transferable college course of study that they can perform well in a competitive academic environment. See page xx and page xx for a discussion of possible accommodations. USC is committed to providing reasonable accommodations to students with disabilities.

Retention of Records

Credentials submitted to the Office of Admission become the property of the university and cannot be returned to the student or duplicated for any purpose.

Application Procedures

Students submit applications online through the Common Application at commonapp.org. Alternatively, students may download the forms from the Common Application Website and submit them via mail to: Office of Admission, University of Southern California, University Park, Los Angeles, CA 90089-0911. A nonrefundable fee will be charged with the completed application, although students with financial need may request a fee waiver. For specific application deadlines and requirements, refer to usc.edu/admission or the *Meet USC* brochure.

Credentials for admission must include complete records of all previous high school and college or university work and the required test scores. Consult the *Meet USC* brochure for detailed information about forwarding official records directly to the Office of Admission and requesting that testing agencies forward appropriate scores.

USC does not undertake the collection of these credentials. The application for admission and complete credentials should be submitted to the Office of Admission by the appropriate deadlines.

Factors given prime consideration for admission to undergraduate study are an applicant's previous academic success and the quality of all records presented. To ensure diversity in the composition of the student body, other considerations may include outstanding talent and abilities, extracurricular activities and letters of recommendation.

Deferring Admission A student is accepted only for the semester and program specified in the letter of admission. If a different semester is desired or if the student cannot arrive on campus in time for the specified semester, students may defer admission for one year by submitting a USC Admission Deferral Request Form to the Admission Office. A deferral may be requested within one year of the original semester of application. (Example: A student applied for the fall 2013 semester and wishes to have admission deferred to the fall 2014

semester.) Longer gaps required for religious reasons or for compulsory military service will also be considered.

Once students have been admitted, they complete, sign and date the Admission Deferral Request Form and submit it to the Office of Admission as soon as possible. Only students who have been formally admitted to USC may request a deferral.

School and Department Application Requirements

Because of strong competition for admission, several schools and academic departments require supplementary application materials and may employ separate deadlines.

Leventhal School of Accounting Transfer applicants interested in accounting must first apply to business administration. A formal request to transfer to the Leventhal School of Accounting can be made once the resident accounting course(s) are successfully completed. In some cases, high school students who have demonstrated exceptional scholastic aptitude for the accounting major will be considered for admission as first-year students. For more information, write or call the USC Marshall School of Business, Office of Undergraduate Admission, Los Angeles, CA 90089-0805, (213) 740-8885, email lsoa_undergrad@marshall.usc.edu or visit marshall.usc.edu/lsoa.

School of Architecture (B.Arch., B.L.Arch., B.S., Architectural Studies) Transfer students should note that the core curriculum will take five years to complete. A portfolio is required of all applicants. For more information, write or call the USC School of Architecture, Los Angeles, CA 90089-0291, (213) 740-2420, email uscarch@usc.edu or visit arch.usc.edu.

Marshall School of Business Students may be admitted as incoming first-year students, as USC undergraduates transferring from another major or as students transferring from another college or university. Transfer students will be considered for admission to the Marshall School of Business once they have completed the prerequisite college writing and business calculus courses. Students should contact the Marshall School for a detailed list of equivalent courses. For further information, write or call the USC Marshall School of Business, Office

of Undergraduate Admission, Los Angeles, CA 90089-0805, (213) 740-8885, send email to busadm@marshall.usc.edu or refer to marshall.usc.edu.

School of Cinematic Arts (Animation and Digital Arts, Critical Studies, Interactive Entertainment, Production, and Writing for Screen and Television) Supplemental materials are due December 1. Transfer students applying to the writing program should note that the core curriculum takes four years to complete. For specific instructions on applications and required supplementary material, contact the USC School of Cinematic Arts, Student Affairs Office, Los Angeles, CA 90089-2211, (213) 740-8358, email admissions@cinema.usc.edu or visit cinema.usc.edu.

Annenberg School for Communication and Journalism (includes majors in broadcast journalism, print journalism and public relations) All applicants to the Journalism and Public Relations programs must submit a one-page statement of intent explaining their reasons for pursuing an education and a career in journalism or public relations. Statements are read with great attention to commitment and literacy. For more information, contact the USC Annenberg School for Communication and Journalism, Recruitment Office, Los Angeles, CA 90089-0281, (213) 821-0770, email ascadm@usc.edu or visit annenberg.usc.edu.

Ostrow School of Dentistry (Dental Hygiene) All prerequisite and general education course work must be completed prior to entering dental hygiene classes, which begin in the fall of the student's junior year. Contact the department about completing necessary courses at USC or elsewhere. Admission is for the fall semester only. The supplemental application deadline is February 1. Only junior transfer students may apply.

For further information and a supplemental application, write or call the Ostrow School of Dentistry, Office of Admissions and Student Affairs, 925 West 34th Street, Room 201, Los Angeles, CA 90089-0641, (213) 740-2841 or visit usc.edu/dental.

School of Dramatic Arts (BFA and B.A.) All first-year and transfer applicants must complete the School of Dramatic Arts section of the USC Supplement to the Common Application. The deadline for all first-year and transfer applicants to BFA programs is December 1. B.A. applicants can apply by the regular first-year and transfer deadlines. An audition/interview is required for admission to the BFA program; applicants will be notified of the dates and locations for auditions and interviews after the departmental application is received. Additional information is available by calling (213) 740-1286 or visiting dramaticarts.usc.edu.

Viterbi School of Engineering Applicants to engineering and computer science majors must respond to the two short-answer questions on the USC Supplement to the Common Application. For first-year applicants to all majors in engineering and computer science, four years of mathematics are required for admission consideration, preferably with calculus in progress or completed by senior year. Three years of natural sciences are also required. Transfer applicants to all majors in engineering and computer science should have completed one or

more semesters of college-level calculus and meet USC admission requirements. Transfer students are encouraged to complete additional pre-engineering course work as available; visit viterbi.usc.edu/admission for a list of relevant courses. For more information, contact the Viterbi School of Engineering Admission and Student Affairs Office at (213) 740-4530 or viterbi.admission@usc.edu

Roski School of Fine Arts (BFA and B.A.) The Roski section of the USC Supplement to the Common Application and slide portfolios are required of all applicants to the BFA and B.A. (Studio Arts) programs. Applicants may contact the USC Roski School of Fine Arts, Watt Hall 104, Los Angeles, CA 90089-0292, (213) 740-2787, for questions about applications and required supplementary materials.

Thornton School of Music The deadline for all music majors (first-year and transfer) is December 1. All required supplementary materials must be received by this date. The Thornton departmental section in the USC Supplement to the Common Application is required for all majors. An audition is required for most majors. Audition requirements and dates can be found at usc.edu/music or by contacting the Thornton School of Music Office of Admission, University Park, UUC 218, Los Angeles, CA 90089-2991, (213) 740-8986. Applicants are urged to apply as early as possible.

Division of Occupational Science and Occupational Therapy Students may apply as early as their first year, but no later than their junior year. Students should indicate their interest as soon as possible to receive proper academic advisement. Contact the division to schedule an appointment with an undergraduate adviser. For information about admission criteria, program course sequence and application procedures, visit usc.edu/ot. Alternatively, write or call the USC Division of Occupational Science and Occupational Therapy at 1540 Alcazar Street, Los Angeles, CA 90089-9003, (866) 385-4250.

School of Pharmacy The Trojan Admission Pre-Pharmacy (TAP) program is a unique program for entering first-year students: a pre-pharmacy/doctor of pharmacy curriculum that affords students continuity in their professional education. Students admitted to TAP begin their pre-pharmacy course work at USC in the freshman year and are guaranteed admission to the USC School of Pharmacy, provided they meet specified criteria. First-year applicants to TAP must submit the Common Application by the January 10 deadline. In addition, applicants must file all departmental materials with the School of Pharmacy by February 15. For more information about TAP, see page xx. All applicants should contact the School of Pharmacy for instructions at USC School of Pharmacy, 1985 Zonal Avenue, PSC 206A, Los Angeles, CA 90089-9121, (323) 442-1466 or pharmacyschool.usc.edu/programs/pre/tap.

Admission from Secondary Schools

Prospective first-year students are evaluated on the content and rigor of their high school course work, their grades, standardized test scores, activity summary, essay, short answers and counselor/teacher

recommendations. There are no absolute "cutoffs" or minimums for grades, rank in class or test scores. We are interested in the interplay of these elements as well as personal accomplishments and potential for success.

Academic Expectations

The most fundamental expectation of each entering student at USC is that she or he will have completed a rigorous high school curriculum in English, mathematics, science, social studies, foreign language and the arts. We realize, of course, that individual talents, circumstances and opportunities vary greatly. Therefore, no specific curriculum is prescribed. However, we do expect that prospective students will take advantage of the highest level of classes offered to them in their secondary schools.

Grade Point Average

When assessing grade point average, consideration is also given to class rank and to the strength and frequency of Advanced Placement/International Baccalaureate course work in a student's curriculum. Naturally, we are interested in consistently strong academic performance throughout the four-year high school record. However, we realize that some bright students, for one reason or another, may encounter difficulties in ninth grade. In these cases, special attention is given to steady and substantial improvement throughout the sophomore, junior and senior years.

Standardized Test Requirement SAT and ACT

USC requires either SAT or ACT scores (with the optional writing test) from all first-year applicants, and from transfer students who have accumulated fewer than 30 transferable semester units since finishing high school. For students who take the SAT more than once, USC records the highest scores for each section — critical reading, mathematics and writing — even if achieved in different sittings. For students taking the ACT, USC will record the highest composite score.

If test information and application forms are not readily available, write to the College Board SAT Program, 901 South 42nd Street, Mount Vernon, IL 62824; or the American College Testing Program, P.O. Box 414, Iowa City, IA 52240. For the SAT, visit collegeboard.org; for the ACT visit act.org.

SAT Subject Tests

We require SAT subject tests only from first-year applicants who do not attend a regionally accredited high school, e.g., home schools, some private, parochial or even some new schools. These students must submit three SAT Subject exams, including one in mathematics, in addition to the SAT or ACT. For all other applicants, these exams are optional. We find them helpful in evaluating applications for merit scholarships.

AP Exams

First-year applicants who have taken Advanced Placement (AP) examinations are encouraged to provide those results.

TOEFL/IELTS

International first-year applicants whose native language is not English must take the Test of English as a

Foreign Language (TOEFL) or the International English Language Testing System (IELTS). International first-year applicants with minimum scores of 600 on the SAT Critical Reading or a 27 on the ACT English are exempt from taking the TOEFL or IELTS. The TOEFL or IELTS must be taken within two years of the application date.

Credit by Examination

Students may earn a total of 32 semester units of credit toward their bachelor's degree by examination. Advanced Placement and International Baccalaureate credit is granted at USC for exams taken before matriculation at a two-year or four-year college and will be evaluated solely according to USC's Advanced Placement and International Baccalaureate policies.

Students who have also earned credit for college courses taken while in high school should refer to page xx.

Advanced Placement Examinations (AP)

USC grants college credit for the Advanced Placement Examinations of the Educational Testing Service. A student may be granted four semester units of credit for most AP tests with scores of four or five. For specific AP credit information call the Office of Admission, (213) 740-1111 or visit usc.edu/articulation.

International Baccalaureate

USC grants either 20 units of credit to students who earn the International Baccalaureate diploma with a score of 30 or higher, or six units for each score of 5 or higher on the IB Higher Level exams, for a maximum of four exams, whichever is higher. International Baccalaureate results should be sent directly from the International Baccalaureate Organization to: University of Southern California, Articulation Office, Los Angeles, CA 90089-0912. For more information, visit usc.edu/articulation.

Subject Credit by Special Examination

See the Subject Credit by Special Examination section (page xx) for further information.

College Level Examination Program (CLEP)

USC does not grant credit on the basis of the College Level Examination Program (CLEP).

Admission from Colleges and Universities

An applicant may be admitted by transfer from a fully accredited college, university or community college, under the following conditions: (1) if the applicant has completed 30 or more transferable college semester units with an appropriately strong grade point average in an academically rigorous selection of courses; (2) if the applicant is not under the penalty of academic or disciplinary disqualification at any college or university previously attended and is entitled to an honorable dismissal; and (3) if proof of high school graduation on a high school transcript has been provided as part of the application materials. If fewer than 30 transferable semester units have been completed at the time of application, the applicant must submit — in addition to the high school transcript — the results of the SAT or the ACT assessment.

Students intending to transfer to USC should refer to the *Transferring to USC* brochure or detailed information about the university's transfer, admission and credit policies. Call the USC Office of Admission at (213) 740-1111 or visit usc.edu/transferring.

The amount of advanced standing granted to a student transferring from another institution is determined in each individual case by the Office of Academic Records and Registrar. A minimum of 64 units toward the bachelor's degree must be earned in residence at USC. For a degree in Architecture, a minimum of 80 units must be earned in residence at USC. A maximum of 70 of the transferable units for this program may be earned at two-year colleges. For students in Engineering's "3-2" Program, at least 48 units must be earned in residence at USC. Two-thirds of any transferable course work must be completed at one of USC's four-year partner institutions.

It is the student's responsibility to report all college-level course work completed outside USC to the Office of Admission when completing the application form.

Omitting such information constitutes a violation of the applicant's affidavit and may result in the revocation of admission to the university.

Records of all courses including correspondence study, extension or summer session courses taken in other institutions after the student's admission to USC must also be filed with the Office of Academic Records and Registrar immediately following completion of the work.

Admission of International Students

The University of Southern California has an outstanding record of commitment to international education. From a small presence during our early history, our international enrollment grew to an average of 200 students by the 1930s. After declining international enrollments in the years surrounding World War II, USC began rebuilding and in 1951 began providing specialized admission services to international students. By 1964, more than 1,000 international students were enrolled at USC. Today, the Office of Admission serves thousands of prospective students each year by providing both general and specialized information and by maintaining the expertise necessary to evaluate academic records from the various educational systems around the world. The Office of Admission also issues the required eligibility certificates for students to enter the United States.

At USC, an international student is an individual of foreign nationality who will be entering or has already entered the United States with a student visa. However, students already residing in the U.S. and holding other non-immigrant visas (such as E2, H2 or L2) are also international students. International students do not qualify for need-based financial aid. U.S. permanent residents, naturalized U.S. citizens and U.S. citizens residing and attending school outside the United States are not considered international students and are eligible for need-based financial aid.

For complete information, see Admission of International Students, page xx.

Resident Honors Program

College Academic Services Building 200

(213) 740-2961

(800) 872-2961

Director: Penelope Von Helmolt, Ph.D.

Each year, USC welcomes a small number of exceptional and highly motivated high school seniors to begin their college careers a year early as part of the Resident Honors Program. The program accepts students interested

in all majors, but looks particularly for mature individuals who are ready for the challenges of a university. The typical Resident Honors student has a cumulative SAT score above 2200 and a high school GPA above 4.0.

The application process for the Resident Honors Program begins during a student's junior year of high school. SAT or ACT scores are an important part of the application and students are encouraged to take the SAT or ACT in October or November. In addition

to an expanded university application, the program also requires a nomination form from the student's high school counselor and two letters of recommendation from high school teachers (one from the student's English teacher). The application is available online at usc.edu/rhp.

For more information, contact Penelope Von Helmolt at (213) 740-2961 or (800) 872-2961, or vonhelm@usc.edu.

Financial Aid for Undergraduate Students

Students at USC benefit from federal, state and university financial aid programs administered by the Financial Aid Office and from scholarships administered by the Office of Admission and various academic departments. USC also offers an interest-free monthly payment plan, a tuition pre-payment plan, and participates in long-term student and parent educational loan programs.

Although international students are not eligible for need-based financial aid, they may be eligible for scholarships offered by their schools or departments. International students should contact their departments directly for information about existing opportunities. International students may also be eligible for some private educational loans.

Application Procedures and Eligibility Requirements for Financial Aid

Detailed information, application procedures and deadlines for financial aid are available online at usc.edu/financialaid. To be eligible for federal, state and university financial aid programs, students must be U.S. citizens, permanent residents or other eligible

non-citizens; have a valid Social Security number; meet Selective Service registration requirements; have a high school diploma, GED or equivalent; meet Satisfactory Academic Progress requirements; and meet all other eligibility requirements. Students must also complete all application requirements by the relevant deadline(s). For most federal and state awards, a minimum of half-time enrollment is required. Full-time enrollment is required for most university awards.

The Financial Aid Office may change these policies at any time to ensure continued compliance with changes in federal and state regulations governing student financial aid. As a result, students must refer to the current catalogue regulations. Unlike degree requirements, changes in regulations, policies and procedures are immediate and supersede those in any prior catalogue.

Scholarships

Scholarships awarded on the basis of academic achievement, leadership, service and talent are available through the Office of Admission, most academic departments at USC, alumni groups, and outside agencies and foundations. Some of these awards require a separate application. In some cases, financial need is also considered. For more information, visit usc.edu/financialaid.

Grants

The Financial Aid Office may award need-based University Grants to eligible students who meet all financial aid application deadlines.

Federal Pell Grants and Federal Supplemental Educational Opportunity Grants (SEOG) are available for students with exceptional financial need. The SEOG is awarded only to eligible students who meet all application deadlines.

Cal Grants A and B are administered by the California Student Aid Commission. All undergraduate aid applicants who are residents of California are required to apply. Cal Grant A provides funds for partial tuition and fees. Cal Grant B recipients receive a subsistence award the first year and receive a subsistence award and tuition award in subsequent years.

Federal Work-Study

The Federal Work-Study program enables eligible students to earn funds through employment either on campus or with an approved off-campus employer. Only students who meet all application deadlines and federal eligibility requirements are considered for this program.

Federal Student and Parent Loans

Federal Perkins Loans may be awarded to eligible students who meet all application deadlines. Repayment begins nine months after the borrower ceases to be enrolled at least half time.

Federal Direct Subsidized and Unsubsidized Stafford Loans are also available to eligible students. Repayment begins six months after the borrower ceases to be enrolled at least half time.

Federal Direct Parent PLUS Loans are available to parents of dependent* undergraduate students who

meet the credit criteria established by the U.S. Department of Education. Payments may be deferred while the student is enrolled at least half time.

**Undergraduate students considered dependent for the purpose of receiving federal financial aid*

Private Financing Programs

Private financing programs are available to help students and parents meet the costs of education by providing long-term financing options. Students should exhaust all federal Title IV assistance available, including Federal Pell Grants, the Federal Direct Stafford Loan and the Federal Direct Parent PLUS loan before considering a private student loan program. The repayment terms of federal programs may be more favorable than the terms of private loan programs.

For more information about student loan programs, visit usc.edu/financialaid/loans.

Financial Aid for a Second Bachelor’s Degree

Students who are pursuing their second bachelor’s degree are eligible for a limited number of financial aid programs, specifically the Subsidized and Unsubsidized Federal Direct Stafford Loan program. Parents of dependent* students may also borrow Federal Direct Parent PLUS Loans.

**Undergraduate students considered dependent for the purpose of receiving federal financial aid*

Financial Aid for Enrollment in a Progressive Degree Program

In most cases, students admitted to a progressive degree program will be classified as undergraduate students for financial aid and registration purposes during the first eight semesters of college enrollment, regardless of whether they enroll in undergraduate or graduate courses. Beginning in the ninth semester, students will be considered graduate students for financial aid and registration purposes and are ineligible for undergraduate financial aid. Students are immediately classified as graduate students and are ineligible for undergraduate financial aid once all undergraduate degree requirements have been completed or the undergraduate degree is conferred, even if they have completed fewer than eight semesters. Students who receive a research assistant or teaching assistant award before completing eight semesters are classified as graduate students and are ineligible to receive undergraduate financial aid.

Financial Aid for Limited Status Enrollment

Students not admitted to a degree-seeking program who enroll as limited-status students are not eligible for federal, state or university financial aid. Refer to the Financial Aid for Graduate Students section on page xx.

Financial Aid Consortium Agreements

Students admitted to a degree-seeking program at USC who enroll at least half-time at another eligible institution and whose courses are applicable to their USC degree may be eligible for limited federal financial aid if a Financial Aid Consortium Agreement is completed. Financial Aid Consortium Agreements are not available for students participating in the Postbaccalaureate

Premedical Program. Contact the Financial Aid Office for more information.

Visiting students enrolled at USC as limited-status students may be eligible for limited federal financial aid through a Financial Aid Consortium Agreement if: 1) they attend USC at least half-time while admitted to a degree-seeking program at their home school; and 2) their USC courses apply to their degree. Contact the Financial Aid Office for more information.

Financial Aid for Students Enrolled in Preparatory Course Work

Students enrolled at least half-time in undergraduate courses required for admission to a degree program may be eligible for limited Federal Direct Stafford Loan program funds. Financial Aid Consortium Agreements are not available for students receiving financial aid for preparatory course work. For more information, contact the Financial Aid Office.

Satisfactory Academic Progress (SAP) Policy

Purpose of Satisfactory Academic Progress Regulations

To be eligible for federal, state and university aid, students are required by the U.S. Department of Education (34 CFR 668.34) to maintain Satisfactory Academic Progress toward their degree objectives. USC has established this SAP policy to ensure student success and accountability and to promote timely advancement toward degree objectives.

The following guidelines provide academic progress criteria for all undergraduate students receiving certain financial aid at USC. Although the requirements for students receiving such financial aid are somewhat more restrictive than for the general student population, they are based on reasonable expectations of academic progress toward a degree. Accordingly, these guidelines should not be a hindrance to any student in good academic standing.

The Financial Aid Office may change these policies at any time to ensure continued compliance with changes in federal and state regulations governing student financial aid. As a result, students must refer to the current catalogue regulations. Unlike degree requirements, changes in regulations, policies and procedures are immediate and supersede those in any prior catalogue.

Table 1
Programs Subject to Financial Aid SAP Policy

Federal and State Programs	USC Programs
Federal Pell Grant	University Grant
Federal Supplemental Educational Opportunity Grant (FSEOG)	University Loan Programs
Federal Work-Study	
Federal Perkins Loans	
Federal Direct Stafford Loans	
Federal Direct Parent PLUS Loans	
California State Cal Grant	

Table 2
Programs Not Subject to Financial Aid SAP Policy

USC and Outside Programs*	
USC Merit Scholarships	USC Alumni Scholarships
USC Topping Scholarships	USC Departmental Awards
USC Assistantships	USC Employee Tuition Assistance Benefits
Sponsored Agency Awards (Including Department of Defense and Veterans Awards)	Outside Agency Scholarships

*Recipients of these awards should contact the awarding agencies/departments for rules regarding award retention.

Definition of Satisfactory Academic Progress (SAP)

At USC, to be eligible for financial aid, as identified above, you must maintain Satisfactory Academic Progress as defined by the following three criteria:

- Meeting a minimum cumulative grade point average requirement (GPA)
- Earning a minimum number of units for credit per semester (Pace of Progression)
- Completing the degree objective within a maximum number of semesters enrolled and a maximum number of units attempted (Maximum Time-Frame Allowance)

Students who fail to meet one or more of the above criteria will be considered to be SAP ineligible or in a financial aid SAP Warning Period as described below. The following explains each of the three SAP evaluation criteria; SAP Ineligibility, Warning and Probation Periods; and the SAP Appeals Process in detail.

Grade Point Average Requirement

To maintain Satisfactory Academic Progress, undergraduate students must meet a minimum cumulative grade point average of 2.0 at each monitored interval and at the end of two academic years for programs lasting more than two years. Refer to Tables 3 and 4 below to understand how specific grades and course types affect students' cumulative grade point averages.

Table 3
Impact of Grades on Cumulative GPA Calculation

Grade Earned	Counted in Grade Point Average
A, B, C, D, F (+/-)	Yes
CR — Credit, P — Pass, IP — In Progress	No
NC — No Credit, NP — No Pass	No
IN — Incomplete	No
IX — Expired Incomplete	Yes
W — Withdrawal	No
UW — Unofficial Withdrawal	Yes
V — Audit	No
MG — Missing Grade	No

Table 4
Impact of Course Type on Cumulative GPA Calculation

Course Type	Counted in Grade Point Average
Remedial course work (course numbers below 100)	Yes
Repeated course work (previous passing grade)	No
Repeated course work (previous failing grade)	Yes (both grades counted)
Transfer course work (pre- and post-matriculation)	No

For more information about grading policy, please visit the USC Department of Grades on the Registrar's Web-site at usc.edu/grades.

Pace of Progression Requirement

To maintain satisfactory progress, undergraduate students must complete a minimum number of units each semester (Pace) to ensure completion of the degree within the maximum time frame. Full-time undergraduate students are encouraged to attempt at least 16 units per semester to ensure that degree objectives can be reached within the maximum time frame allowed. A lower number of units per semester is permitted if required by academic advisement.

Pace of Progression is calculated by dividing the cumulative number of credits the student has successfully completed by the cumulative number of credits the student has attempted.

$$\text{Pace of Progression} = \frac{\text{Cumulative units completed}}{\text{Cumulative units attempted}}$$

To be eligible to receive federal, state and institutional financial assistance detailed above, a student is required to successfully complete a minimum of 67 percent of all attempted credits.

$$\text{Pace of Progression} \geq 67\% = \text{SAP eligible for Pace}$$

Review Tables 5 and 6 below to understand how grades and course types will affect students' Pace of Progression calculation:

Table 5
Impact of Grades on Pace of Progression and Maximum Time-Frame Allowance

Grade Earned	Pace of Progression		Counted Toward Maximum Time Frame
	Units Completed	Units Attempted	
A, B, C, D (+/-)	Yes	Yes	Yes
CR, P, IP	Yes	Yes	Yes
F, UW, IX,	No	Yes	Yes
NC, NP, W, MG, IN	No	Yes	Yes
V	No	No	Yes

Table 6
Impact of Course Types on Pace of Progression and Maximum Time-Frame Allowance

Course Type	Pace of Progression		Counted Toward Maximum Time Frame
	Units Completed	Units Attempted	
All Undergraduate and Graduate Course Work Taken for a Letter Grade			
Undergraduate and graduate course work (course numbers 100 and above)	Yes	Yes	Yes
Remedial course work (course numbers below 100)	No	No	Yes
Repeated course work (previous passing grade)	Yes	Yes	Yes
Not Counted in the GPA			
Repeated course work (previous failing grade)	Yes	Yes	Yes
Transfer course work (pre- and post-matriculation)	Yes	Yes	Yes

Maximum Time-Frame Allowance

To demonstrate Satisfactory Academic Progress, students must complete their degree objective within a specified amount of time. The time frame will depend on the student's enrollment status and educational objective. Tables 5 and 6 above show how different grades and course types will be counted against the Maximum Time-Frame Allowance.

Maximum Units and Semesters

Undergraduate students in single-degree, four-year programs requiring 128 units are eligible for financial aid for a maximum of 144 total attempted units or a maximum of nine SAP semesters, whichever comes first. The allowances will be increased as necessary for single-degree programs requiring more than 128 units. For example, students pursuing a five-year, single-degree program, such as the Bachelor of Architecture, will be eligible to receive financial aid for a maximum of 176 attempted units or 11 SAP semesters.

SAP Semesters

Each semester in which a student attempts 6 to 11 units is counted as a one-half (0.5) SAP semester. Each semester in which a student attempts 12 or more units is counted as a full (1.0) SAP semester. Semesters in which a student attempts fewer than six units are not counted as SAP semesters.

Maximum Time-Frame Allowance for Students Pursuing a Second Bachelor's Degree

Students pursuing a second bachelor's degree are eligible for a limited number of financial aid programs. Refer to the section on Financial Aid for a Second Bachelor's Degree in this catalogue. Students seeking financial aid for a second bachelor's degree are monitored for maximum time frame based on the following:

- Students who have received their first bachelor's degree from another institution will be granted a maximum of 64 additional units or five semesters,

whichever comes first, to complete their second bachelor's degree at USC.

- Students who have received their first bachelor's degree from USC will be granted a maximum of 44 additional units or four semesters, whichever comes first, to complete their second bachelor's degree at USC.
- The maximum unit and semester allowances for a second bachelor's degree may be reconsidered if additional units are required for completion of a specific program of study. The student, together with his or her academic adviser, must complete a Satisfactory Academic Progress Appeal form and submit it to the USC Financial Aid Office.
- All second bachelor's degree candidates must also meet previously stated GPA and Pace of Progression requirements.

How Satisfactory Academic Progress is Monitored

The Office of Academic Review and Retention monitors the minimum grade point average requirement. The Financial Aid Office monitors Pace of Progression and the Maximum Time-Frame Allowance.

When Satisfactory Academic Progress is Monitored

Satisfactory Academic Progress is monitored for all undergraduate financial aid applicants at the end of each enrolled semester.

Potential Delay of Disbursements Due to Monitoring of Satisfactory Academic Progress

Financial aid may not be disbursed to a student's account until SAP has been evaluated. The Financial Aid Office cannot complete the SAP evaluation until prior semester grades have been officially posted by the Office of Academic Records and Registrar. Therefore, an otherwise eligible student who is in a SAP Warning or SAP Probation Period may experience a delayed financial aid disbursement if grades are not made official before the beginning of the subsequent semester. No exceptions can be made to this process.

Notification of Satisfactory Academic Progress Status

Students who have met Satisfactory Academic Progress requirements will not receive a SAP notification. The Financial Aid Office will notify any student who does not meet SAP requirements via email at the student's USC email address.

Failure to Maintain Satisfactory Academic Progress

Exceeding the Maximum Time-Frame Allowance and Academic Disqualification

Students who have reached the Maximum Time-Frame Allowance are ineligible for further financial aid without an approved, written SAP Appeal. Students who are academically disqualified from the university are ineligible for further financial aid. There is no financial aid SAP Warning Period in either of these instances.

Failing GPA and Pace of Progression Requirements

Students who do not meet the Pace of Progression or GPA requirements are placed on a one-time, one-semester financial aid SAP Warning Period.

Financial Aid SAP Warning Period

Students who do not meet the Pace of Progression requirement or who are on academic probation for GPA will be placed on a one-time, one-semester financial aid SAP Warning Period. Students may continue to receive financial aid while in this one-semester warning period without a written appeal. Students who are placed on a financial aid SAP Warning Period are encouraged to seek both academic and financial aid advisement. By the end of the financial aid one-semester warning period, the student must meet all Satisfactory Academic Progress requirements.

Financial Aid SAP Ineligibility

As stated above, students who have exceeded the Maximum Time-Frame Allowance and those who are academically disqualified are ineligible to receive financial aid.

Students who do not meet the minimum requirements by the end of the one-semester warning period for GPA and Pace of Progression violations will no longer be considered to be making Satisfactory Academic Progress and will become ineligible for financial aid without an approved, written SAP Appeal.

Students in their one-semester SAP Warning Period who receive grades of D, W, UW, IN, F, IX, MG, NC, NP and V will no longer be considered to be making Satisfactory Academic Progress and will become ineligible for financial aid without an approved, written SAP Appeal.

The one-semester financial aid SAP Warning is only available to students one time throughout their degree program. Students who regain eligibility by meeting SAP standards at the end of the warning period and subsequently fall below the standard will be considered ineligible for financial aid without another SAP Warning Period.

Regaining Financial Aid Eligibility

Regaining Financial Aid Eligibility with a Grade Change or Academic Improvement

Students who have been placed on a Financial Aid SAP Warning due to insufficient GPA or Pace of Progression can be reinstated by a grade change or by successfully completing sufficient units or bringing up their GPA to meet the accepted standards by the end of their warning period. The student must notify the Financial Aid Office in writing once the requirements have been met.

Regaining Financial Aid Eligibility with a SAP Appeal for Maximum Time Frame

Students who need additional time to complete their degrees must meet with their academic adviser to complete a SAP Appeal Form. Students must also update their expected graduation date with the Degree Progress Office. The Financial Aid Office may increase the maximum time frame for students who have changed majors, are adding a major, or have experienced a one-time extenuating circumstance such as illness or injury that has since been resolved. The Financial Aid Office will make no adjustments for declared minors.

Regaining Financial Aid Eligibility with a SAP Appeal for GPA or Pace of Progression

Students may also appeal the determination that they are not meeting Satisfactory Academic Progress GPA

and Pace of Progression requirements. The following can be considered: extended illness; one-time extenuating circumstances that have since been resolved; and enrollment limitations due to academic advisement.

SAP Appeal Form and Letter

The student and the academic adviser must submit an Undergraduate Satisfactory Academic Progress Appeal form with complete supporting documentation to the Financial Aid Office. The SAP Appeal Form must contain the specific academic plan for the student that the adviser has approved. For the appeal to be approved, the academic plan must lead to graduation within 150 percent of the published degree time. The student must also provide a written appeal letter that includes the following information/explanation: (a) What caused the work at USC to fall below acceptable standards? Students should think carefully and provide a specific explanation. (b) How have those conflicts been resolved? (c) How will the student maintain good academic standards and progress toward the degree if the appeal is granted?

When to Submit a SAP Appeal

Students should not submit SAP Appeals for GPA or Pace of Progression deficiencies when they are in a Financial Aid SAP Warning period. These pre-emptive appeals are unnecessary and will be withdrawn. Rather, students should wait until they have been notified by the Financial Aid Office that they are ineligible for financial aid because of a SAP deficiency. SAP Appeals for Maximum Time-Frame Allowance may be submitted at any time, but students should first ensure that the Degree Progress Office has updated their expected graduation term.

SAP Appeals must be submitted before the end of the semester for which the aid is sought. Financial aid cannot be reinstated retroactively for a past semester.

Limitations on Approvals for SAP Appeals

The Financial Aid Office will never increase the Maximum Time-Frame Allowance past 150 percent of the published degree requirements for one undergraduate degree.

The Financial Aid Office will make no adjustments for students who declare minors. Minors must be completed within the same time frame as the student's major program(s) of study.

Students who are on SAP Probation (see below) as a result of an approved appeal will not receive funding for more than one undergraduate degree program. For these students, no exceptions will be made to maximum semesters or units to support the addition of a second major or a minor program of study.

Academic Disqualification and Activity Restrictions That Prevent Registration

Students who are academically disqualified or otherwise prevented from registering for future semesters may submit SAP Appeals. However, those appeals will not be evaluated until the activity restrictions have been resolved.

Notification of SAP Appeal Decisions

SAP Appeals will be evaluated and the Financial Aid Office will notify the student of the decision via email at the student's USC email address.

Financial Aid SAP Probation Period

Appeals for insufficient Pace of Progression and/or GPA are approved through the use of a semester-by-semester SAP Contract. Students placed on a SAP Contract are eligible for financial aid on a probationary basis, strictly according to the terms of the contract. While students are on SAP Probation, the Financial Aid Office will review their academic progress each semester to ensure they have met the specific terms of their contracts.

The SAP Contract

The SAP Contract is a written agreement between the student, the academic adviser and the Financial Aid Office in which the student commits to following a specific academic plan that leads to graduation. Rein-stated eligibility through a contract may alter the type and amount of financial aid for which a student is eligible. Terms of the SAP Contract may be stricter than the standard SAP regulations cited in this section. Acceptance of the approved SAP Contract supersedes all other SAP regulations. Any deviation by the student from the terms of the contract results in the forfeiture of future financial aid eligibility.

Submitting SAP Appeals after Failing SAP Probation

Students on SAP Probation as a result of an approved appeal who fail to meet the terms of their accepted SAP Contracts may submit a subsequent SAP Appeal. However, these appeals are granted on an exception basis. Students will be required to document specifically the exceptional circumstances that caused them to fail their SAP Contract and how those problems have been resolved.

Financial Aid Application and SAP Appeal Deadlines

A student appealing his or her Satisfactory Academic Progress status must meet all financial aid application deadlines and other eligibility requirements. A SAP Appeal must be submitted before the end of the semester for which the aid is sought. Financial aid cannot be reinstated retroactively for a past semester. As with any type of financial aid appeal, Satisfactory Academic Progress Appeals are funded on a funds-available basis.

Financial Aid Policy Regarding Falsification of Financial Aid Information

The types of information covered by this policy include all documents and information submitted to apply for and/or receive need-based financial aid, scholarships and private financing funds. These documents and information include, but are not limited to, the following:

- Free Application for Federal Student Aid (FAFSA)
- Student Aid Report (SAR)
- CSS Financial Aid/PROFILE Application and CSS Non-custodial Parent PROFILE Application
- Supplemental Form for Financial Aid/Enrollment and Housing Form
- Student and parent federal income tax forms and other income documentation
- Documentation of U.S. citizenship or eligible non-citizen status
- Documentation of housing/living arrangements
- Academic documents relating to high school diploma or college course work
- Loan applications, promissory notes and related documentation
- Specific program applications
- Federal Work-Study time sheets
- Any university financial aid forms and related documentation
- Any written, electronic or verbal statements sent to or made to a university employee regarding the student's financial aid application or other financially related documents

The integrity of the documents and the honesty of the information presented through them are critical to the financial aid process. Students should be aware that they will be held responsible for the integrity of any financial aid information submitted either by them or on their behalf.

If the university determines that a student or parent has provided falsified information, or has submitted forged documents or signatures, the following steps may be taken without prior notification to the student or parent:

(1) An incident report will be filed with USC's Office of Student Judicial Affairs and Community Standards, following procedures outlined in the University Student Conduct Code. (The University Student Conduct Code is published in *SCampus*, the student guidebook.) Pending resolution of the complaint, the Financial Aid Office may restrict the distribution of any further aid to the accused student.

(2) If the Financial Aid Office or the student conduct review process finds that a violation has occurred, the consequences may include, but are not limited to, the following:

- The student will be required to make full restitution of any and all federal, state, private and/or university scholarship, grant, loan or work funds to which he or she was not entitled.
- Until full restitution is made, all federal, state and university funds will be withheld from the student, including all funds disbursed in past or in current terms.
- No arrangements will be made with the Cashier's Office or Collections Office on the student's behalf to settle their account. The student will be responsible for all charges incurred on the student's account because of the loss of federal, state or institutional financial aid funds.
- If the student is determined to be ineligible for financial aid because of a basic eligibility criterion, no further federal, state or university funds will be awarded to the student in any future terms of enrollment at the university.
- The student may be ineligible for future participation in some or all financial aid programs for a minimum of one year or longer. In some cases, the student will not be eligible to receive funds from that program in any future terms of enrollment at the university.

- The student will not be awarded funds to replace those lost because a student is considered ineligible due to dishonesty.

(3) In addition to any consequences directly related to the student's financial aid, the student may be assigned disciplinary sanctions as described in the Student Conduct Code (11.80).

(4) As required by federal and state law, the USC Financial Aid Office will report any infraction to the appropriate office or agency. These include, but are not limited to, the U.S. Department of Education Office of the Inspector General, state agencies or other entities that may take whatever action is required by federal and state law. In this report, the Financial Aid Office will describe in detail the incident, the response from the Financial Aid Office and any additional actions taken by or pending with the university.

Withdrawal Implications for Recipients of Financial Aid

During the Drop/Add Period

During the university's published drop/add period, students who drop or reduce their enrollment may be eligible for a 100 percent refund of tuition for classes dropped.

Financial aid recipients must immediately notify the Financial Aid Office in writing when a drop from one or more classes during the drop/add period results in an enrollment status different from that on which their current financial aid eligibility was based. The same applies if one or more classes are cancelled.

The Financial Aid Office will review the student's new enrollment and, if appropriate, revise the student's eligibility based on the new enrollment status.

If a financial aid recipient drops from *all* classes or drops to less than half-time status during the drop/add period, *all* financial aid awards must be returned to their respective programs. If the student was given financial aid funds for other expenses, he or she will be expected to return those funds to the university.

After the Drop/Add Period

Students who are recipients of Title IV federal student aid are also covered by federal policies. Title IV federal student aid is awarded to a student under the assumption that the student will attend for the entire period for which the assistance is provided and thereby "earn" the award. When a student ceases academic attendance prior to the end of that period, the student may no longer be eligible for the full amount of federal funds that the student was originally scheduled to receive.

If a Title IV recipient withdraws from all classes on or before the session is 60 percent complete, based on the last date of attendance, federal policy requires that any "unearned" Title IV federal student aid be returned to the U.S. Treasury, even if the student is not entitled to a refund of tuition.

A student is required to immediately notify the Registrar and the Financial Aid Office when he or she stops attending classes. If the student fails to notify either office, it is possible that the 50 percent point in the term will be used to determine the student's last date of attendance, in accordance with federal regulations. If a student withdraws from all classes, the Financial Aid Office will determine if that student's period of attendance resulted

in the earning of all federal student aid awarded for that term. If it is determined that not all the scheduled federal aid has in fact been earned, then the Financial Aid Office will calculate the amount to be returned to the federal student aid programs. The Financial Aid Office will bill the student via his or her university account for the amount returned. It is the student's responsibility to contact the Cashier's Office to settle the bill.

Additional Responsibilities of Students Who Withdraw

Any time a student withdraws from one or more courses, the student should consider the potential effect on his or her Satisfactory Academic Progress (SAP) status. See page xx for more information about SAP requirements.

Whenever a student's enrollment drops to less than half time or the student withdraws completely, or if a student takes a leave of absence, he or she must notify the lender or holder of any loans. Student borrowers of federal or university loans must also satisfy exit loan counseling requirements at studentloans.gov.

It is also the student's responsibility upon withdrawal from all classes to notify the Student Financial Services Office, the Housing Services Office, the Transportation Services Office and/or the USCard Office, if the student has charges from these offices on his or her student account. Students who have withdrawn from studies may be entitled to a prorated cancellation of charges from these offices.

Leave of Absence

Financial aid recipients considering a leave of absence should be aware of the financial aid implications. Although obtaining an approved leave of absence from their programs does allow students to re-enroll in the university without formal re-admission, it does not allow them to defer their loan repayment. The university reports student enrollment to the National Student Clearinghouse throughout the academic year. Lenders and federal loan service agencies subsequently query this database to determine if a student has maintained continuous half-time or greater enrollment.

Student Loan Repayment

If students are on a leave of absence from the university, their lender or federal loan service agency will move their loan from an "in-school" status to a grace

or repayment status as required. While on a leave of absence, students may be able to postpone repayment by obtaining a deferment or forbearance from their loan servicer(s) as a result of unemployment or economic hardship. Students should contact their loan servicer(s) for more information about loan repayment. Students may review their federal loan history and determine their loan service agencies by visiting the National Student Loan Data System Website at nslds.ed.gov. Once they re-enroll on a half-time or greater basis, they may be able to request deferment for "in-school" status.

Tuition Refund Insurance Plan

To complement its own refund policy, the university makes available to students Tuition Refund Insurance, an insurance policy designed to protect the investment students and their families make in education. The Financial Aid Office strongly encourages all financial aid recipients to take advantage of this plan. If a student formally withdraws from all classes after the end of the drop/add period and he or she is covered by Tuition Refund Insurance, the student may receive:

- A credit to his or her student account equal to 100 percent of charges for tuition and mandatory fees, if the withdrawal is the result of documented personal illness or accident; or
- A credit to his or her student account equal to 60 percent of the charges for tuition and mandatory fees, if the withdrawal is the result of a documented mental/nervous disorder.

The Tuition Refund Insurance credit will be applied first to any outstanding charges on the student's university account, including any charges resulting from the return of Title IV federal student aid. Recipients of university and/or federal financial aid will then receive a cash refund equal to the amount of cash payments made to the account plus any loan payments still on the account (after all returns of Title IV aid have been made in accordance with federal policies, if applicable). The remainder of the insurance credit will be used to repay university financial aid grant or scholarship programs.

Brochures about Tuition Refund Insurance requirements and claim forms are available in the Cashier's Office and the Registrar's Office. All questions about the insurance plan should be directed to these offices.

Notes on Federal Policy

Title IV Federal Student Aid

Students are considered recipients of Title IV federal student aid if they have used funds from one or more of the following programs to meet educational expenses for the semester in question: Federal Pell Grants, Federal Supplemental Educational Opportunity Grants (SEOG), Federal TEACH Grants, Federal Perkins Loans, Federal Direct Stafford Loans (Subsidized or Unsubsidized), or Federal Direct Graduate or Parent PLUS Loans.

Period of Enrollment

At USC, the periods of enrollment are generally measured using the session(s) in which the student enrolled on a semester basis, starting on the first day of classes and ending on the final day of examinations for a given term. For purposes of Title IV federal student aid, any scheduled break of five or more days will not be included in the measurement of the enrollment period. For programs offered in modules (sessions that do not span the entire length of the semester), breaks of more than five days between modules will not be included in the measurement of the enrollment period.

Measurement of Earned Title IV Federal Student Aid

When a student withdraws from all classes, the Financial Aid Office will calculate the percentage of earned Title IV federal student aid using the point of withdrawal. The earnings calculation is based on the number of days of enrollment, up to and including the day of withdrawal, divided by the total number of days in the enrollment period. In most cases, when a total withdrawal is determined to occur on or before the 60 percent point in a semester, some federal aid will need to be returned.

Return of Title IV Federal Student Aid

To satisfy federal regulation, returns to Title IV financial aid programs must be made in the following order:

- Federal Direct Unsubsidized Stafford Loans
- Federal Direct Subsidized Stafford Loans
- Federal Perkins Loans
- Federal Direct PLUS Loans
- Federal Pell Grants
- Federal Supplemental Educational Opportunity Grants (SEOG)
- Federal TEACH Grants
- Other Title IV federal programs

Course Work Taken Elsewhere

Admitted students receive a transfer credit report prepared by the Degree Progress Department showing unit and subject credit granted for college courses and relevant exams, such as AP, IB and A-levels.

Students are required to submit complete, official transcripts of all course work attempted at any post-secondary institution as soon as final grades are posted. All post-secondary transcripts must be submitted regardless of the type of course(s) or the quality of the work. A student's failure to provide transcripts for all course work attempted prior to enrollment at USC or while away from USC may result in denial of transferred course work and a charge of a violation of the university's academic integrity policies.

Accreditation

The University of Southern California affirms the practice of accreditation of American post-secondary academic institutions by the six regional accreditation agencies: the Middle States Association of Colleges and Schools, the North Central Association of Colleges and Schools, the New England Association of Schools and Colleges, the Northwest Association of Schools and Colleges, the Southern Association of Colleges and Schools, and the Western Association of Schools and Colleges. Acceptance of course work and/or degrees completed by undergraduate and graduate students applying to the University of Southern California will be based on accreditation by these six agencies. Certain graduate schools, seminaries, conservatories and professional

institutions of national renown that are not accredited by a regional agency may be considered for graduate transfer work by the Articulation Office in consultation with the USC department or professional school to which the student is applying.

Acceptance of course work and/or degrees from post-secondary institutions overseas will be based on the recognition and approval of the college or university as a degree-granting institution by the Ministry of Education within the respective country.

Non-transferable Course Work

USC's transfer policies have been established to enable students to achieve either an undergraduate or graduate degree that will reflect traditional academic study

and research. For that reason, the following types of non-traditional course work will not transfer to USC for undergraduate credit:

- Life experience; portfolio work; continuing education; work experience; formally structured courses offered by civilian non-collegiate sponsors such as businesses, corporations, government agencies and labor unions, even if evaluated by the American Council on Education (ACE).
- Extension courses not accepted toward a degree by the offering institution.
- Equivalency examinations.
- Remedial (e.g., mathematics below college algebra), college preparatory and personal development/life skills courses.
- Independent study, directed study, internships and correspondence courses from two-year schools.
- Areas of study offered by other accredited institutions toward the baccalaureate but not offered by USC, such as agriculture, business office procedures, hotel management, interior design, food services, industrial mechanics, fire science, police academy and similar technical or professional programs.
- Undergraduates will not receive credit for graduate level transfer courses.

In addition, no more than 4 units of English as a Second Language (toward the maximum of 12 ESL/ALI units which may apply to a degree) will transfer. Also, a maximum of 4 units of physical education activity courses and music ensemble will transfer. A maximum of 8 units of dance, 12 units of physical education theory courses and 16 units of individual instruction in music will transfer.

Course Work Requiring Review

USC will determine on a case-by-case basis whether to grant credit for certain types of courses taken at accredited institutions. Courses which require review by the Articulation Office include:

- Independent study, directed study and internships taken at four-year schools.
- Courses in which the traditionally expected number of contact hours may not have occurred, including distance learning, televised, online or correspondence courses, and courses taught in non-traditional time modes such as concentrated "intensive" sessions or special weekend modules.
- Transfer credit from studio courses in fine arts, music and theatre is limited. See articulation agreements or usc.edu/articulation.

Articulation Agreements

Articulation agreements with California community colleges are issued by the Articulation Office and indicate courses available for transfer to USC. These agreements can be found at usc.edu/articulation. These agreements are revised periodically and are subject to change, depending on course content, availability and changes in USC's academic policies. Articulation agreements are not issued for four-year colleges and universities.

Credit for Military Education

The university evaluates courses completed through the armed services and may grant credit for such courses.

Consult the Degree Progress Department regarding the possibility of receiving credit for these courses.

College Courses Taken During High School Enrollment

All undergraduate students entering USC may receive a combined maximum of 32 elective units for college courses taken before high school graduation and/or examinations (e.g., AP or IB) taken before matriculation at a two-year or four-year college. A maximum of 16 of these 32 units will be allowed for college courses taken before high school graduation. These courses must appear on the college transcript as part of the regular college curriculum and are expected to be taught on the college campus by college faculty and not used toward high school graduation. Students whose courses are taken at a college and were not used toward high school graduation may file an articulation petition to request more than 16 units. These courses (as well as AP and IB exams) will not receive course equivalence or credit toward writing, diversity or foreign language requirements, although they may fulfill general education categories I, II, III or V where appropriate. However, departments may use them as a basis to waive prerequisites or specific course requirements on a case-by-case basis.

Students may not receive credit for both an AP exam (or IB or other international exam) and a college course taken before high school graduation covering the same subject matter, nor for an AP and IB exam covering the same subject matter.

Besides earning elective units, some AP tests and international exams fulfill general education requirements. Finally, scores of 4 or 5 on AP tests in modern languages if taken in spring 2007 or later will satisfy the third-semester foreign language requirement. Details will be reported on the student's transfer credit report.

Students who began full-time college study at four-year institutions before completing their high school diplomas can submit transcripts for special evaluation. These programs, which typically are conducted on a college campus and are taught by regular faculty, will be evaluated on an individual basis. More than 16 units may be granted. Students entering full-time college programs at two-year colleges before graduating from high school are subject to the 16 unit maximum stated above.

Transfer Credit

Transfer Credit Report

A transfer credit report is prepared prior to enrollment for every new undergraduate transfer student admitted to regular standing. To ensure complete evaluation of transfer courses, it is the student's responsibility to submit complete, official transcripts from all post-secondary schools in which course work was completed as soon as final grades are posted. All post-secondary transcripts must be submitted regardless of the type of course(s) or the quality of the work. The purpose of the credit report is to acknowledge officially all transferable work toward the USC degree sought by the student. The university expects undergraduate transfer students to assist in completing a final review of all prior transfer courses by the end of their first semester of study.

Students should review their transfer credit reports for accuracy and report any missing courses or incorrect information to Degree Progress, Hubbard Hall 010. To request a change in the way a transfer credit report has been evaluated, students may initiate articulation petitions at usc.edu/OASIS. All articulation petitions regarding courses taken before entering USC should be initiated as soon as possible after matriculation, and no later than the end of the first semester of study.

Total transferable units attempted and total transferable units accepted toward the degree are posted on the credit report. For the purposes of making an admissions decision, all grades (including grades of D and below) are calculated into the grade point average and are used in calculating a total grade point average for graduation. Neither subject nor unit credit will be granted for courses that have been graded with less than a C- (1.7).

For limitations on use of transfer courses to fulfill general education and writing requirements see the General Education Program, page xx.

Subject Credit and Degree Credit

Subject credit does not carry unit value toward units required for a degree but may fulfill a required or elective subject area. Degree credit is defined as units that may be applied toward the units required for a USC degree.

Transfer Unit Limitations

A student may earn a maximum of 64 units of credit toward a bachelor's degree from other accredited institutions. The B.Arch. degree and the Engineering "3-2" Program allow a maximum of 80 units of transfer credit, of which a maximum of 70 may be from two-year colleges. Students will receive only subject credit for work completed in excess of the unit limitations.

After completion of 64 college-level units applicable to the undergraduate degree, no more than 8 additional units may be allowed for transfer credit. In the case of the B.Arch. degree, no more than 8 additional units may be allowed for transfer credit after completion of 84 college-level units.

Transfer Credit for Repeated Course Work

Degree credit will *not* be given for a transferred undergraduate course that a student has previously taken at USC. (This regulation does not apply to a USC course that a student withdraws from and then takes at another institution.)

Subject credit only will be given for a transferred undergraduate course previously taken at USC, under the following conditions: (1) When the student took the course at USC, he or she received a grade or mark which fails to meet departmental or university requirements. (2) The student obtained prior approval from the department offering the USC course on the USC transfer course work pre-approval form at usc.edu/transferecredit.

Permission to Register at Another Institution Undergraduate Transfer Credit Limitations

As defined in the Residence Requirement, once students enroll at USC, only courses taken during a summer semester will be considered for transfer credit. No transfer work may be used to satisfy any general education requirements or the writing requirement if those

courses are taken after a student has enrolled at USC. In addition, transfer courses taken after enrollment at USC cannot be used to fulfill upper division requirements in the major without prior approval, using the request for exception to residence form available from the student's major adviser or, for undeclared students, from the Office of the Dornsife College of Letters, Arts and Sciences associate dean for academic programs. Transfer courses may not fulfill upper division requirements in the minor under any circumstances.

Students are advised to consult their major department or College Academic Services before taking college course work at another institution. Students should also consult the Degree Progress Department to ensure that the work will transfer.

Procedure

If students wish to take summer course work elsewhere after admission to USC, they must first obtain appropriate pre-approval. Even if there is an articulation agreement, pre-approval is necessary to assure the student's eligibility. Most students can use the online pre-approval process available on OASIS. In some cases, the paper pre-approval form must be used. It is available at usc.edu/transfercredit.

Once the course work has been completed elsewhere, students must request the other institution to send an official transcript to USC so that the course work can be evaluated and transferred.

Students are required to provide transcripts of all course work attempted at any post-secondary institution, regardless of the type of course(s) or the quality of the work. A student's failure to provide transcripts for all course work attempted while away from USC may result in denial of transferred course work and a charge of a violation of the university's academic integrity policies.

Students should request that a transcript be sent to the Degree Progress Department, Hubbard Hall 010, 700 Child's Way, Los Angeles, CA 90089-0912. All transcripts must arrive in a sealed envelope from the issuing institution.

To avoid a possible delay in graduation, official transcripts from post-secondary institutions should be submitted as soon as the course work is completed and graded by the transfer institution. It is advisable to complete all transfer work prior to the final semester of enrollment at USC. If transcripts for transfer course work are not available during the final USC semester, it will likely delay degree posting and result in a later degree date.

Students who have questions concerning the transfer credit shown on the transfer credit report should inquire at the Degree Progress Department. Any

questions regarding the applicability of previous course work toward major requirements should be referred to the student's academic adviser.

Leave of Absence

Interruptions of enrollment can cause problems in the continuity of course work within a student's program. Therefore, leaves of absence are generally discouraged. A student who must interrupt studies for compelling reasons may request a leave for a stated period. Students who find it necessary to be excused from registration in fall or spring semesters should request a leave of absence and withdraw from their classes by the last day to drop or add courses. Students should contact their academic adviser, ask for a *Leave of Absence Student Handbook* and complete the Leave of Absence form in the back of the handbook (also available at usc.edu/loa). Completed forms should be submitted to the student's academic adviser for review and approval. If, as a result of the leave, the student exceeds the time limits for completion of degree or general education requirements, he or she may not be allowed automatically to continue to follow the original catalogue of enrollment. Students who fail to apply for a leave of absence may encounter difficulties with residence requirements and financial aid when returning to USC. A leave of absence does not exempt students from the residence requirement described below.

Financial aid recipients considering a leave of absence should be aware of the financial aid implications. For more information, refer to the Withdrawal Implications for Recipients of Financial Aid section.

Program Reactivation

Students who have failed to attempt course work for at least one semester within an academic year without filing a Leave of Absence form will have their POST (Program of Study) expired. Returning undergraduates will be required to meet with their department adviser and complete and sign a POST Reactivation form before registration will be permitted. Graduate students who wish to return will be governed by applicable university policies, including the continuous enrollment requirement.

Residence Requirement

A minimum of 64 units toward the bachelor's degree must be earned in residence at USC, with the following exceptions: Students earning a bachelor's degree in architecture must earn 80 units in residence; students in engineering's "3-2" Program must earn at least 48 units in residence.

Once students matriculate at USC, all courses taken for subject or unit credit in the fall and spring semesters

must be taken in residence. Only transfer work that appears on the transfer institution's transcript for a summer term will be accepted. In addition, all upper-division units required for the major and minor must be earned in residence. However, a student's department may apply upper-division courses taken elsewhere prior to matriculation to major requirements on a case-by-case basis.

In rare circumstances, permission may be granted in advance to take a course out of residence. This permission is documented on the Request for Exception to Residence form. The form, which is available from the student's major adviser or, for undeclared students, from the Office of the Dornsife College of Letters, Arts and Sciences associate dean for academic programs, is used to record major department approval to use the course toward the major. Questions about the residency policy may be addressed to the Degree Progress Department, JHH 010, (213) 740-1328. Questions regarding exceptions to this policy may be directed to the Office of Academic Review and Retention, TRO 101, (213) 749-7741.

Academically disqualified students must meet with a counselor from the Office of Review and Retention for advisement and forms for departmental preapproval rather than using the request for exception to residency form.

After completion of 64 college-level units applicable to the undergraduate degree, no more than eight additional units may be allowed for transfer credit. In the case of the B.Arch. degree, no more than eight additional units may be allowed for transfer credit after completion of 84 college-level units.

Units earned in overseas studies programs approved by USC's University Committee on Curriculum and in courses approved by consorial or other institutional agreements are considered to be taken in residence.

Residence Requirement for a Second Bachelor's Degree

For students with their first bachelor's degree from USC, 32 units applicable to the degree beyond the number of units required for the first USC bachelor's degree must be completed in residence.

For students with their first bachelor's degree from another institution, the second bachelor's degree requires 64 units applicable to the degree completed in residence, except for the B.Arch. degree, which when earned concurrently with the M.Arch. degree requires 32 units applicable to the degree completed in residence.

Requirements for Graduation

Catalogue Regulations, Policies and Procedures

In addition to degree requirements outlined below, undergraduate and graduate students are also subject to current catalogue regulations, policies and procedures. Examples include, but are not limited to, the policy on the grade of incomplete and graduation with honors. Unlike degree requirements, changes in regulations, policies and procedures are immediate and supersede those in any prior catalogue.

Graduation Date

A student will be awarded the graduation date for the term in which degree requirements, including submission of supporting documents, have been met. Although course work may have been completed in a prior term, the degree will be awarded only for the term for which all academic and administrative requirements have been fulfilled. Students wishing to change the degree date from that indicated on the STARS Report should

file a Change of Information card with the revised degree date. The cards are available in the Degree Progress Department in Hubbard Hall 010. Degrees are not awarded retroactively.

Discontinued Degree Programs

Students pursuing major or minor programs that the university discontinues will be allowed to complete them within a specified time limit. The time limit will

be specified at the point of discontinuance of a major or minor program and begins at that point. It is determined according to the student's progress toward degree completion and will not exceed five years for any student.

Closed Record

The academic record of a student who has completed the program of study or ceased attendance is considered closed. Once a student's record is closed, no further additions or changes may be made. This includes, but is not limited to, such things as change of name, registering in additional course work, resolution of marks of incomplete (IN) and missing grade (MG), declaration of minors, etc.

Degree Requirements

Undergraduate degree requirements consist of grade point averages, residence requirements, general education requirements, the writing requirement, the diversity requirement, pre-major and major requirements, and minor requirements. Undergraduate students may elect to follow (a) the degree requirements in the catalogue current in their first term of enrollment after admission or readmission at USC or (b) degree requirements in a subsequent catalogue as long as they were enrolled in a term in which it was in effect. However, students may not mix catalogues. An exception is that students may follow the requirements for a minor from a different catalogue year than the major; and students pursuing two majors may follow major requirements from different catalogue years.

While there are no specific time limits for completing the bachelor's degree, over the years many departments change their major requirements in accordance with developments in the field and department. Occasionally, general education requirements are changed or a degree program is discontinued.

Therefore, undergraduate students who do not complete their degrees within six consecutive years from the beginning of the semester of their first completed USC course work will not be allowed automatically to continue following their pre-major, major and minor requirements as specified above. (This time limit includes semesters during which students are not enrolled.) The pertinent department chair will decide what pre-major, major and minor requirements each student must follow and communicate the decision to the student in writing.

Students who do not complete their degrees within 10 consecutive years from the beginning of the semester of their first completed USC course work will not be allowed automatically to continue their general education requirements. (This time limit includes semesters during which students are not enrolled.) The General Education Office will decide what general education requirements each student must follow and communicate the decision to the student in writing.

An appeal of a department's decision may be made to the dean of the appropriate academic unit or the Provost's Office for academic units without departments. An appeal of a general education decision may be made to the Committee on Academic Policies and Procedures (CAPP).

Grade Point Average Requirement

A grade point average of at least C (2.0) on all baccalaureate units attempted at USC, as well as on the combined USC-transfer GPA, is required for undergraduate degrees. A minimum cumulative grade point average of 2.0 in all upper division courses applied toward the major is also required, regardless of the department in which the courses are taken. The university will not deviate from policies governing the calculation of the grade point average through inclusion or exclusion of course work.

Unit Requirement

Students are required to take a minimum of 128 baccalaureate units at the undergraduate level (of which not more than four units may be physical education units). A student may earn a maximum of 16 units for individual instruction in music at the 101/201/301 levels and comparable transfer courses. No more than 8 units of dance technique courses (DANC 181 through DANC 189 and comparable transfer courses) may be applicable toward an undergraduate degree. Of the 128 unit minimum at least 32 units must be upper division course work. Students must also complete all upper division course work in the major at USC. The university will not deviate from the minimum unit requirements stated above or the additional unit-specific requirements. Some disciplines require more than the minimum requirements. Check individual department listings for specific requirements.

Unit credit indicates the number of semester units earned in the course; these units may or may not be applicable to the degree. Degree credit indicates the units are applicable to the degree.

Pass/No Pass Graded Work

A maximum of 24 units of undergraduate course work taken on a pass/no pass basis may be used toward an undergraduate degree and a maximum of 4 of these 24 units may be applied to the general education requirements. WRIT 130, WRIT 140 and WRIT 340 will not fulfill undergraduate writing requirements if taken on a Pass/No Pass (P/NP) basis.

Use of Pass/No Pass course work to fulfill major requirements must be approved in writing by the academic department. Course work required for a minor may not be taken on a P/NP basis. Individual academic departments may have placed further restrictions on whether a course taken on a Pass/No Pass basis can be used to fulfill specific requirements.

In cases where a student has registered for a course on Pass/No Pass (P/NP) basis, and the student is subsequently found to have committed an academic integrity violation in the course, the instructor may elect to assign a penalty letter grade, rather than assign a mark of Pass or No Pass.

General Education Requirements

General education and writing requirements for all students are provided on pages xx-xx. Additional specific information is included with the information on individual majors.

Diversity Requirement

The diversity requirement must be met by all students who began college at USC or elsewhere in fall 1993 or later. It can be met by passing any one course carrying

the designation "m" for multiculturalism. The list of courses and further details about meeting the diversity requirement are found on pages xx and xx-xx.

Gateway Course

A gateway course is a lower division 3-4 unit course that introduces and showcases the minor or major curricula of an academic field of study. It is intended to be a student's first exposure to a field of study.

Upper-division Major Course Work

The university requires that all undergraduate students successfully complete at USC all the upper division courses that are applied to their major. Substitution of a comparable upper division course for a required one may be entered in the STARS exception process by the departmental adviser with the support of the department. Substitutions and waivers of USC or transfer courses for upper division requirements for majors are to be limited to a combination of 25 percent. Substitution of courses with the same departmental prefix are exempted from this limit. Lower division courses cannot be substituted for upper division course requirements.

Minor Programs

Application for a minor must be made to the department or professional school and an appropriate endorsement must appear on a change/addition of major or minor degree objectives form. Students who decide not to complete a declared minor must formally drop the minor program. Failure to drop a declared minor may delay the awarding of the student's degree.

The following guidelines apply to minor programs:

(1) Minor programs are available to students matriculated in an undergraduate degree program and must be completed simultaneously with the major degree program.

(2) Minors constituted of course work from a single department may not be earned by students majoring in that department.

(3) Students may take an interdepartmental minor in which their major unit participates as long as at least four courses (at least 16 units) required for the minor are not courses offered by the major department.

(4) Students must take at least four courses (at least 16 units) which are unique to the minor (i.e., not required to fulfill the student's major, another minor or general education requirements).

(5) All upper-division course work required for the minor must be taken at USC.

(6) Departments at their discretion may substitute no more than 25 percent of the required units defined in the catalogue for a given minor program. Substitution of courses with the same departmental prefix are exempted from this limit. Lower division courses cannot be substituted for upper division course requirements.

(7) Departments at their discretion may waive no more than 4 units for minor programs with 17 to 20 units or no more than 8 units for minor programs with more than 20 units for each student. The number of units unique to the minor after any departmental waivers or substitutions must total at least 16 units.

(8) No course work required for the minor may be taken on a Pass/No Pass basis.

(9) A minimum cumulative 2.0 GPA must be achieved in all courses applied toward the minor. A

higher minimum may be required by the sponsoring department or unit.

(10) Students whose major degree programs do not include a language requirement need not satisfy that requirement to earn a minor from the USC Dornsife College of Letters, Arts and Sciences or a professional school that has a language requirement unless the minor specifically requires the language.

(11) Completion of the minor program will be recorded on the transcript. The student receives a separate minor certificate for each minor program completed.

(12) Undergraduate students may elect to follow the minor requirements in (a) the catalogue current in their first term of enrollment after admission or readmission to USC, or (b) a subsequent catalogue year if the minor was newly introduced or revised after their term of admission or readmission. This does not affect the catalogue year they follow for their major.

Honors Programs

Departmental Honors

The following departments have received approval from the university Undergraduate Curriculum Committee for their majors to graduate with departmental honors:

Accounting (B.S.); American Studies and Ethnicity; Anthropology; Art History; Biochemistry; Biological Sciences (B.A. and B.S.); Broadcast and Digital Journalism; Business (B.S.); Chemistry (B.A. and B.S.); Cinematic Arts (Critical Studies); Classics; Communication; Comparative Literature; Earth Sciences; East Asian Languages and Cultures; Economics; English; French; Gender Studies; Geodesign; Geological Sciences; History; Human Development and Aging (B.S.); International Relations; Linguistics; Linguistics/Philosophy; Linguistics/Psychology; Mathematics (B.A. and B.S.); Neuroscience; Philosophy; Policy, Planning, and Development; Political Science; Print and Digital Journalism; Psychology; Public Relations; Religion; Sociology; Spanish; and Spatial Sciences.

The minimal requirements for receiving departmental honors are that the student: (1) satisfactorily completes course work for an honors project and (2) achieves no less than a 3.5 GPA ($A = 4.0$) in the major at the time of graduation. Each program, department or school will designate what it considers the appropriate course work and honors project.

Departmental honors are noted on academic transcripts but not on the diploma.

Renaissance Scholar Honors

The Steven and Kathryn Sample Renaissance Scholars program recognizes select undergraduate students who

have excelled in their studies while completing a major and a minor (or two majors) in widely separated fields of study. In order to be designated a USC Renaissance Scholar candidate, a student must be currently enrolled in an undergraduate degree program and must have his or her fields of study certified to meet the breadth with depth requirement.

To be designated a Renaissance Scholar upon graduation, a student must graduate within five years of matriculation at USC, with a minimum 3.5 overall grade point average, a minimum 3.5 grade point average in each of the major(s) and/or minor(s) course requirements and with university honors. A student with multiple certified program combinations (three or more academic programs) may fulfill the 3.5 major and/or minor grade point average requirement with a minimum of two programs from one of his or her certified pairings of academic programs.

Renaissance Scholar honors are noted on academic transcripts but not on the diploma.

Discovery Scholar Honors

The Discovery Scholars program recognizes undergraduate students who have excelled in their studies while demonstrating the ability to create exceptional new scholarship or artistic works. In order to be designated a USC Discovery Scholar candidate, a student must be currently enrolled in an undergraduate degree program and must meet the criteria established by his or her school for outstanding original research or creative work. The criteria may include submission of a research thesis, an artistic portfolio or some other evidence of original contributions to the discipline. Faculty letters of recommendation may also be required.

To be designated a Discovery Scholar upon graduation, a student must graduate within five years of matriculation at USC with a minimum 3.5 overall grade point average and with university honors.

Discovery Scholar honors are noted on academic transcripts but not on the diploma.

Global Scholar Honors

The Global Scholars program recognizes undergraduate students who have excelled in their studies both at home and abroad. Applicants must have participated in one or more international programs administered by USC or an outside institution for a minimum of 10 weeks. In order to be designated a USC Global Scholar candidate, a student must be currently enrolled in an undergraduate degree program and must submit a capstone paper, project or research paper based on criteria established by his or her school, as well as a reflective

essay. Faculty letters of recommendation may also be required.

To be designated a Global Scholar upon graduation, a student must graduate within five years of matriculation at USC with a minimum 3.5 overall grade point average and with university honors.

Global Scholar honors are noted on academic transcripts but not on the diploma.

Multimedia Literacy Honors

See page xx for a full description of this honors program.

Distinction in Liberal Arts Honors

See page xx for a full description of this honors program.

Graduation with University Honors

To be eligible for undergraduate honors at graduation, a minimum overall grade point average of 3.5 for *cum laude*, 3.7 for *magna cum laude* and 3.9 for *summa cum laude* is required. Students must meet these averages, both on residence work attempted and on combined transferred and residence work attempted. The honors award is then determined by either the GPA for the residence work or the GPA for the combined transferred and residence work, whichever is lower. The university will not deviate from policies governing the calculation of the grade point averages required for graduation with honors through inclusion or exclusion of course work. University honors are noted on academic transcripts and the diploma.

Graduate Credit for 400 and 500 Level Work Taken as an Undergraduate

An undergraduate student who is within 12 semester units of the bachelor's degree and has a cumulative grade point average of at least 3.0 may request to enroll in and reserve for graduate credit a limited amount of work at the 400 and 500 levels during the last semester as a senior, provided that the semester program does not exceed 16 semester units. A written request should be submitted to the Degree Progress Department and should bear the endorsements of the chair of the student's major department and of the department in which the reserved work is to be taken. The Degree Progress Department verifies that the units being reserved are not needed to fulfill requirements for the bachelor's degree. The student must present a copy of the final action to the Registration Department at the time of enrollment.

The USC Core/General Education

All undergraduates must satisfy the USC Core, which includes general education, writing and diversity requirements. The general education requirements are met with course work provided by the Dornsife College of Letters, Arts and Sciences; the same is true for the lower-division writing requirement. The upper-division writing requirement and the diversity requirement may be satisfied with courses offered by the Dornsife College

of Letters, Arts and Sciences or by some of the university's professional schools.

General Education Requirements

In the USC general education program, students learn to think critically and to understand the present in historical and cultural perspective — to become generally well-educated people. To achieve this goal, students in

all undergraduate programs must complete one course that satisfies each of the following categories:

Foundations:

- I. Western Cultures and Traditions
- II. Global Cultures and Traditions
- III. Scientific Inquiry

Case Studies:

- IV. Science and Its Significance
- V. Arts and Letters
- VI. Social Issues

For more information about the general education requirements, see the course lists on pages xx–xx and the description of the program on page xx.

Writing Requirement

In their writing classes, students learn to think critically, to build sound arguments and to express their ideas with clarity. The writing requirement comprises two courses; most students meet this requirement with:

Lower-division requirement:

WRIT 140 Writing and Critical Reasoning

Upper-division requirement:

WRIT 340 Advanced Writing

Certain groups of students may meet this requirement with other course work. For more information on the writing requirement, see page xx.

Diversity Requirement

The diversity requirement is designed to provide undergraduate students with the background knowledge and analytical skills to enable them to understand and respect differences between groups of people and to understand the potential resources and/or conflicts arising from human differences on the contemporary American and international scene. Students will increasingly need to grapple with issues arising from different dimensions of human diversity such as age, disability, ethnicity, gender, language, race, religion, sexual orientation, nationality and social class. These dimensions and their social and cultural consequences will have important ramifications for students' personal, professional and intellectual lives, both for the time they are students and in later life. Students will gain exposure to analytical frameworks within which these issues are to be understood and addressed, including social, political, cultural, ethical and public policy analyses. It is the university's goal to prepare students through the study of human differences for responsible citizenship in an increasingly pluralistic and diverse society.

Course Requirement

The diversity requirement can be met by passing any one course from the list of courses carrying the designation "m" for multiculturalism. In addition to fulfilling the diversity requirement, some of the courses on the list also meet general education requirements; others also meet major requirements; still others meet only the diversity requirement but count for elective unit credit. Courses that meet the diversity requirement are listed on pages xx–xx.

General Education Course Lists**Category I. Western Cultures and Traditions****Classical Civilizations and Their Legacies**

AHIS 120g Foundations of Western Art

AHIS 201g

Digging into the Past: Material Culture and the Civilizations of the Ancient Mediterranean

COLT 101g

Masterpieces and Masterminds: Literature and Thought of the West

CLAS 150g

The Greeks and the West

CLAS 151g

Civilization of Rome

CLAS 280g

Classical Mythology

CLAS 320gm

Diversity and the Classical Western Tradition

HIST 101g

The Ancient World

PHIL 115g

Ancient Greek Culture and Society

PHIL 225g

Love and Its Representations in Literature, Philosophy and Film

ANTH 250g

Race and Sexual Politics in Southeast Asia

ANTH 263g

Exploring Culture Through Film

ANTH 273g

Shamans, Spirits, and Ancestors: Non-Western Religious Traditions

ANTH 315g

North American Indians

ANTH 316gm

North American Indians in American Public Life

CLAS 349g

Ancient Empires

COLT 102g

On Location: The Place of Literature in Global Cultures

COLT 250g

Cultures of Latin America

COLT 264g

Asian Aesthetic and Literary Traditions

COLT 382g

Zen and Taoism in Asian Literature

EALC 110g

East Asian Humanities:

The Great Tradition

EALC 125g

Introduction to Contemporary

East Asian Film and Culture

EALC 130g

East Asian Ethical Thought

EALC 145g

Introduction to Chinese Culture, Art and Literature

EALC 150g

Global Chinese Cinemas and Cultural Studies

EALC 340g

Japanese Civilization

EALC 342g

Japanese Literature and Culture

EALC 344g

Korean Literature and Culture

EALC 350g

Chinese Civilization

EALC 352g

Chinese Literature and Culture

EALC 354g

Modern Chinese Literature in

Translation

EALC 358g

Transpacific Sinophone Literature and Culture: Taiwan, Hong Kong, Tibet, SE Asia, and North America

EASC 150g

East Asian Societies

EASC 160gm

China and the World

HIST 105g

The Korean Past

HIST 106g

Chinese Lives: An Introduction to

Chinese History

HIST 107g

Japanese History

HIST 180g

The Middle East

HIST 266g

Business and East Asian Culture, 1800 to the Present

HIST 271g

Early Native American Stories

HIST 273g

Colonial Latin America

HIST 275g

The Worlds of the Silk Road

HIST 324g

Islam in Russia and the Soviet Union

LING 295g

The Ancient Near East: Culture, Archaeology, Texts

MDA 155g

Cultural Forms and Values II

PORT 250g

Cultures of Brazil and Lusophone Africa

POSC 255g

Cultures, Civilizations and Ethnicities in World Politics

REL 112g

Religions of Egypt and the Ancient Near East

REL 131g

Religions of Asia

REL 133g

Religions of Latin America

REL 134xg

Introduction to Buddhist Literature

REL 135xg

Religions of China

REL 136xg

Sense and Sensuality in Indian

Religious Literature

REL 137g

Introduction to Islam

SLL 330g

Russian Thought and Civilization

Judeo-Christian Traditions and Their Legacies

AHIS 220g

Medieval Visual Culture

HIST 102gm

Medieval People: Early Europe and Its Neighbors, 400–1500

JS 100g

Jewish History

REL 111g

The World of the Hebrew Bible

REL 121g

The World of the New Testament

REL 125g

Introduction to Christianity

REL 132g

Religions of the West

The Making of the Modern World

AHIS 121g

Art and Society: Renaissance to Modern

COLT 251g

Modern Literature and Thought of the West Since 1800

COLT 374gm

Women Writers in Europe and America

HIST 103g

The Emergence of Modern Europe

HIST 104g

Modern Europe

MDA 205g

Cities and Civilization

PHIL 101g

Philosophical Foundations of Modern Western Culture

PHIL 155g

Modern Philosophy and the Meaning of Life

PHIL 220g

Science, Religion and the Making of the Modern Mind

PHIL 262g

Mind and Self: Modern Conceptions

Foundations of American Civilization

AMST 301g

America, the Frontier, and the New West

HIST 100gm

The American Experience

MDA 105g

Cultural Forms and Values I

MDA 155g

Cultural Forms and Values II

PORT 250g

Cultures of Brazil and Lusophone Africa

POSC 255g

Cultures, Civilizations and Ethnicities in World Politics

REL 112g

Religions of Egypt and the Ancient Near East

REL 131g

Religions of Asia

REL 133g

Religions of Latin America

REL 134xg

Introduction to Buddhist Literature

REL 135xg

Religions of China

REL 136xg

Sense and Sensuality in Indian

Religious Literature

REL 137g

Introduction to Islam

SLL 330g

Russian Thought and Civilization

Category II. Global Cultures and Traditions

AHIS 125g

Arts of Asia: Antiquity to 1300

AHIS 126g

Introduction to Asian Art: 1300 to the Present

AHIS 127g

Arts and Civilizations of Ancient Middle and South America

AHIS 128g

Arts of Latin America

AHIS 284g

Art in Context: Introduction to the Chinese Visual World

AMST 135gm

Peoples and Cultures of the Americas

AMST 250gm

The African Diaspora

ANTH 100g

Principles of Human Organization: Non-Western Societies

ANTH 140g

Native Peoples of Mexico and Central America

ANTH 235g

The Changing Pacific: Culture, History and Politics in the New South Seas

Category III. Scientific Inquiry**For Most General Education Students**

The following courses are recommended for most students seeking to satisfy general education requirements.

ASTR 100Lxg	The Universe
BISC 101Lxg	Cellular and Molecular Biology
BISC 104Lxg	How the Body Works: Topics in Human Physiology
CHEM 103Lxg	General Chemistry for the Environment and Life
GEOL 105Lg	Planet Earth
GEOL 107Lg	Oceanography
GEOL 130Lg	The Nature of Scientific Inquiry
GEOL 387abcg	Undergraduate Team Research
MDA 125Lg	Scientific Principles
PHYS 100Lxg	The Physical World

For Specified Cohorts

The following courses will also satisfy this requirement, but they are intended for specific groups of students and are not usually appropriate for most general education students. Consult an academic adviser before enrolling in any of the following courses unless your major requires you to do so.

BISC 120Lxg	General Biology: Organismal Biology and Evolution
BISC 121Lg	Advanced General Biology: Organismal Biology and Evolution
CHEM 103Lxg	General Chemistry for the Environment and Life
CHEM 105aLg	General Chemistry
CHEM 115aLg	Advanced General Chemistry
PHYS 125Lg	Physics for Architects
PHYS 151Lg	Fundamentals of Physics I: Mechanics and Thermodynamics

Category IV. Science and Its Significance

ANTH 200Lg	The Origins of Humanity
ASTR 200Lxg	Earth and Space
BISC 102Lxg	Humans and Their Environment
BISC 150Lxg	The Nature of Human Health and Disease
BISC 180Lxg	Evolution
BISC 230Lxg	Brain, Mind and Machines: Topics in Neuroscience
CHEM 201Lg	Chemistry in the Environment, Energy, and Society
CHEM 203Lxg	Chemistry in Life: AIDS Drug Discovery and Development
CHEM 205Lxg	Chemical Forensics: The Science, and Its Impact
EXSC 205Lxg	The Science of Human Performance
GEOG 260Lg	Natural Hazards
GEOL 108Lg	Crises of a Planet
GEOL 125Lg	Earth History: A Planet and Its Evolution
GEOL 150Lg	Climate Change
GEOL 240Lg	Earthquakes
GEOL 241Lg	Energy Systems
LING 110Lg	In a Word
LING 275Lg	Language and Mind
LING 285Lg	Human Language and Technology
MDA 175Lg	Science and Technology
MDA 200Lg	The Cutting Edge: From Basic Science to the Marketplace

PHIL 285Lg	Knowledge, Explanation, and the Cosmos
PHIL 286Lg	Issues in Space and Time
PHYS 200Lxg	The Physics and Technology of Energy: Keeping the Motor Running
PSYC 165Lg	Drugs, Behavior and Society
PSYC 200Lg	Love and Attachment
PSYC 201Lg	The Science of Happiness
PSYC 339Lg	Origins of the Mind
SSCI 265Lg	The Water Planet

Category V. Arts and Letters

ARLT 100g	Arts and Letters
ARLT 101g	Studies in Arts and Letters
ARLT 105g	First Year Seminar, Arts and Letters

Category VI. Social Issues

The following courses require concurrent enrollment in WRIT 140 Writing and Critical Reasoning, unless the first course of the writing requirement has already been satisfied.

AHIS 255g	Culture Wars: Art and Social Conflict in the Modern World
AMST 101gm	Race and Class in Los Angeles
AMST 242gm	Social Responses to Disaster
AMST 252gm	Black Social Movements in the United States
AMST 274gm	Exploring Ethnicity Through Film
ANTH 105g	Culture, Medicine and Politics
ANTH 125g	Social Issues in Human Sexuality and Reproduction
ANTH 240gm	Collective Identity and Political Violence: Representing 9/11
ECON 238xg	Political Economy and Social Issues
ENST 150xg	Environmental Issues in Society
GEOG 257g	Environment and Ethics
HIST 215g	Business and Labor in America
HIST 225g	Film, Power, and American History
HIST 235g	War and the American Experience
HIST 240g	The History of California
HIST 245gm	Gender and Sexualities in American History
HIST 255g	The Evolution Debates
HIST 265g	Understanding Race and Sex Historically
IR 100xg	The United States and World Affairs
IR 101xg	International Relations
JS 211g	The Holocaust
JS 258g	Food, Faith and Conflict
LING 115g	Language, Society, and Culture
MDA 165g	Social Inquiry
MDA 167g	Marginal Groups in America
MDA 170g	La Frontera: The U.S. -Mexico Borderlands
PHIL 135g	Legal Controversies and Ethical Principles
PHIL 137gm	Social Ethics for Earthlings and Others
PHIL 140g	Contemporary Moral and Social Issues
PHIL 141g	The Professions and the Public Interest in American Life
POSC 130g	Law, Politics and Public Policy
POSC 165g	Modern Times
POSC 220g	Critical Issues in American Politics
POSC 248g	International Human Rights
POSC 265g	Environmental Challenges

REL 140g	Religion and Ethical Issues
SOCI 100gm	Los Angeles and the American Dream
SOCI 142gm	Diversity and Racial Conflict
SOCI 150gm	Social Problems
SOCI 155gm	Immigrant America
SOCI 169gm	Changing Family Forms
SOCI 210g	Science, Technology, and Social Conflict
SOCI 220gm	Questions of Intimacy
SOCI 250gm	Grassroots Participation in Global Perspective
SOCI 255g	Sociology of Globalization
SWMS 210gm	Social Issues in Gender
SWMS 215g	Gender Conflict in Cultural Contexts

Diversity Course List

AHIS 250m	Modernity and Difference: Critical Approaches to Modern Art (4)
AHIS 304m	Italian Renaissance Art: Old Masters and Old Mistresses (4)
AHIS 363m	Race, Gender and Sexuality in Contemporary Art (4)
AHIS 365m	African American Art (4)
AHIS 475m	Blackness in American Visual Culture (4)
AMST 101gm	Race and Class in Los Angeles (4)
AMST 135gm	Peoples and Cultures of the Americas (4)
AMST 200m	Introduction to American Studies and Ethnicity (4)
AMST 202m	Interethnic Diversity in the West (4)
AMST 206m	The Politics and Culture of the 1960s (4)
AMST 220m	The Making of Asian America (4)
AMST 242gm	Social Responses to Disaster (4)
AMST 250gm	The African Diaspora (4)
AMST 252gm	Black Social Movements in the United States (4)
AMST 274gm	Exploring Ethnicity Through Film (4)
AMST 285m	African American Popular Culture (4)
AMST 330m	Black Music and the Political Imagination (4)
AMST 332m	Post-Civil Rights Black America (4)
AMST 337m	Islam in Black America: From Slavery to Hip-Hop (4)
AMST 340m	Latina/o LA (4)
AMST 342m	Law and Identities (4)
AMST 344m	Islamic Law and American Society (4)
AMST 348m	Race and the Environment (4)
AMST 353m	Race and Racism in the Americas (4)
AMST 357m	Latino Social Movements (4)
AMST 373m	History of the Mexican American (4)
AMST 377m	Legacies of Viet Nam (4)
AMST 378m	Introduction to Asian American History (4)
AMST 389m	Carceral Geographies (4)
AMST 395m	African American Humor and Culture (4)
AMST 448m	Chicano and Latino Literature (4)
AMST 449m	Asian American Literature (4)
AMST 452m	Race, Gender and Sexuality (4)
AMST 466m	The Psychology of African-Americans (4)
ANTH 240gm	Collective Identity and Political Violence: Representing 9/11 (4)

ANTH 316gm	North American Indians in American Public Life (4)	FREN 375m	Global Narratives of Illness and Disability (4)	PPD 372m	Public Service in an Urban Setting (4)
ANTH 328m	Culture Change and the Mexican People (4)	FREN 448m	France and Islam (4)	PPD 485m	U.S. Immigration Policy (4)
ANTH 330m	Culture, Gender and Politics in South Asia (4)	GERO 380m	Diversity in Aging (4)	PSYC 462m	Culture and Mental Health (4)
ANTH 333m	Forms of Folklore (4)	GERO 435m	Women and Aging: Psychological, Social, and Policy Implications (4)	SOCI 100gm	Los Angeles and the American Dream (4)
ANTH 371m	Cross-Cultural Research on Urban Gangs (4)	HIST 100gm	The American Experience (4)	SOCI 142gm	Diversity and Racial Conflict (4)
ARCH 440m	Literature and the Urban Experience (4)	HIST 102gm	Medieval People: Early Europe and Its Neighbors, 400–1500 (4)	SOCI 150gm	Social Problems (4)
ARCH 442m	Women's Spaces in History: "Hussies," "Harems" and "Housewives" (4)	HIST 245gm	Gender and Sexualities in American History (4)	SOCI 155gm	Immigrant America: Migration, Incorporation and the New Second Generation (4)
BUCO 333m	Communication in the Working World — Managing Diversity and Conflict (4)	HP 400m	Culture, Lifestyle, and Health (4)	SOCI 169gm	Changing Family Forms (4)
CLAS 320gm	Diversity and the Classical Western Tradition (4)	HP 420m	Gender and Minority Health Issues (4)	SOCI 200m	Introduction to Sociology (4)
COLT 374gm	Women Writers in Europe and America (4)	IML 295Lm	Race, Class and Gender in Digital Culture (4)	SOCI 220gm	Questions of Intimacy (4)
COMM 324m	Intercultural Communication (4)	IML 420m	New Media for Social Change (4, max 8)	SOCI 250gm	Grassroots Participation in Global Perspective (4)
COMM 383m	Sports, Communication and Culture (4)	JOUR 465m	Latino News Media in the United States (4)	SOCI 305m	Sociology of Childhood (4)
COMM 395m	Gender, Media and Communication (4)	JOUR 466m	People of Color and the News Media (4)	SOCI 342m	Race Relations (4)
COMM 458m	Race and Ethnicity in Entertainment and the Arts (4)	JOUR 468m	The American Press and Issues of Sexual Diversity (4)	SOCI 355m	Immigrants in the United States (4)
COMM 465m	Gender in Media Industries and Products (4)	JS 360m	Identity, Community, and Service: Jews and Other Americans (4)	SOCI 356m	Mexican Immigrants in Sociological Perspective (4)
CTCS 192m	Race, Class and Gender in American Film (4)	JS 379m	Mixed Matches: Inter-marriage and American Society in the 21st Century (4)	SOCI 360m	Social Inequality: Class, Status, and Power (4)
EALC 335m	Korean American Literature (4)	MOR 385m	Business, Government and Society (4)	SOCI 366m	Chicana and Latina Sociology (4)
EASC 160gm	China and the World (4)	MUJZ 100xm	Jazz: A History of America's Music (4)	SOCI 375m	Asian Americans: Ethnic Identity (4)
EDCO 324m	Asian American Psychology (4)	MUJZ 419m	The Jazz Experience: Myths and Culture (4)	SOCI 376m	Contemporary Issues in Asian American Communities (4)
ENGL 444m	Native American Literature (4)	MUSC 400m	The Broadway Musical: Reflection of American Diversity, Issues and Experiences (4)	SOCI 432m	Racial and Ethnic Relations in a Global Society (4)
ENGL 445m	The Literatures of America: Cross-Cultural Perspectives (4)	MUSC 420m	Hip-Hop Music and Culture (4)	SOCI 435m	Women in Society (4)
ENGL 447m	African-American Narrative (4)	MUSC 430m	Music and the Holocaust (4)	SOWK 200xm	Institutional Inequality in American Political and Social Policy (4)
ENGL 474m	Literature, Nationality and Otherness (4)	MUSC 450m	The Music of Black Americans (4)	SPAN 413m	Social and Geographic Varieties of Spanish (4)
ENGL 476m	Images of Women in Contemporary Culture (4)	PHIL 137gm	Social Ethics for Earthlings and Others (4)	SWMS 210gm	Social Issues in Gender (4)
ENGL 478m	Sexual/Textual Diversity (4)	POSC 424m	Political Participation and American Diversity (4)	SWMS 301m	Introduction to Feminist Theory and the Women's and Men's Movements (4)
FREN 370m	Equality and Difference Around the Enlightenment (4)	POSC 441m	Cultural Diversity and the Law (4)	SWMS 384m	Gender, Social Inequality and Social Justice (4)
		PPD 100m	The Politics of Human Differences: Diversity and Discrimination (4)	SWMS 385m	Men and Masculinity (4)
		PPD 250m	Los Angeles, The Enduring Pueblo (4)	SWMS 455m	Gender and Sport (4)
			Third World Cities (4)	THTR 395m	Drama as Human Relations (4)
				THTR 405m	Performing Identities (4)
				THTR 476m	African American Theatre, Dance, and Performance (4)
				THTR 488m	Theatre in the Community (4)

Undergraduate Degree Programs

USC is a major university providing diverse academic programs. As such it has evolved into a complex organization. The basic underlying principle in its organization is simple: groups of faculty with similar areas of knowledge and interest are grouped together to form departments or schools. These units work together in determining the courses to be offered, requirements for degrees, and the content and rationale underlying their curricula.

In practice, the organization becomes more complex. Certain areas of study are based on broad areas of knowledge which need to draw faculty from several departments. The following list of undergraduate degrees provides a guide to the organization of USC. The

index includes all degrees offered, and the school which administers the degree.

The basic undergraduate degrees are the Bachelor of Arts and the Bachelor of Science. Students may obtain these degrees in a variety of majors that have been formally approved. More specialized degrees, such as a Bachelor of Music, require more undergraduate study devoted to professional training.

Area of Emphasis

An Area of Emphasis is a specific focus within a major. Areas of Emphasis are listed within parentheses following the appropriate majors and do not appear on diplomas but are indicated on transcripts.

Combined Program

A combined program is an organized set of requirements from two academic units in a single undergraduate degree program that combines two majors. Examples are: Linguistics/Psychology and Physics/Computer Science.

Double Major Within the Dornsife College of Letters, Arts and Sciences

A double major consists of two majors, which allow the student to earn the same degree, either a B.A. or B.S. degree, conferred by the Dornsife College of Letters, Arts and Sciences. The Dornsife College of Letters, Arts and Sciences offers two kinds of majors, "departmental" and "interdepartmental" (see page xx). A double

major may consist of two departmental majors, two interdepartmental majors, or one departmental and one interdepartmental major. All double majors require a minimum of 12 upper division courses. Some upper division courses may count for both majors. For double departmental majors two upper division courses may count toward both majors. For departmental and interdepartmental majors, three upper division courses may count toward both majors. The student receives a single diploma.

Other Double Majors

Double majors may be offered in other schools. The two majors must be offered by different departments but lead to the same degree, such as a Bachelor of Science or Bachelor of Music. Double majors consisting of two majors in the same department are not permitted. The student receives a single diploma.

Progressive Degree Programs

The progressive degree plan enables an undergraduate student to begin an integrated program of study joining bachelor's degree and master's degree programs in the same or different departments. This option is available to outstanding USC undergraduates who have completed 64 units of course work at USC, and often results in a more expeditious completion of the master's degree than otherwise would be possible.

Students are admitted to the master's degree at the completion of the sixth semester. Progressive degree students must fulfill all requirements for both the bachelor's degree and the master's degree except for the combined total number of units for the degrees. The bachelor's degree can be awarded first. Further details about progressive degrees can be found on page xx.

Second Bachelor's Degree

A second bachelor's degree requires a minimum of 32 units beyond the number required for the first. If the first bachelor's degree was earned at USC, a minimum of 32 units for the second must be completed at USC. If the first bachelor's degree was earned at another institution, a minimum of 64 units toward the second must be completed at USC. (See the policy on residence requirements for a second bachelor's degree, page xx.)

For some degrees, more than the 32 units beyond the first bachelor's degree will be required because all requirements for both degrees must be met. The student receives a separate diploma for each degree upon completion.

The first and second bachelor's degrees may be completed at the same time but there is no requirement that they be.

Minor Programs

In addition to the degree programs listed, many academic units offer minor programs. A list of minors appears after the list of undergraduate degrees. The requirements for each minor are listed in the appropriate school section. A separate minor certificate is issued for each minor a student completes. Minors are also recorded on the student's transcript. See page xx for more detailed information about minor programs.

The Undergraduate Degree Programs List

All degrees are listed alphabetically by the school which provides the program for the degree objective. All degrees are listed alphabetically in the index at the end of this catalogue. Areas of emphasis do not appear on diplomas but are indicated on transcripts.

Degree Programs

Program descriptions and degree requirements may be found in the sections of this catalogue under the units listed in boldface type. Unless otherwise noted, each program is under the jurisdiction of the school or division under which that degree is listed. All degrees are listed alphabetically in the index.

School of Architecture

Architectural Studies (B.S.)
Architecture (B.Arch.)
Landscape Architecture (B.L.Arch.)

Leventhal School of Accounting

Accounting (B.S.)

Marshall School of Business

Business Administration (B.S.)
Business Administration (Cinematic Arts) (B.S.)
Business Administration (International Relations) (B.S.)
Business Administration (World Program) (B.S.)
Computer Science/Business Administration (B.S.)

School of Cinematic Arts

Animation and Digital Arts (B.A.*)
Cinematic Arts, Critical Studies (B.A.*)
Cinematic Arts, Film and Television Production (B.A.*, BFA)
Interactive Entertainment (B.A.*)
Media Arts and Practice (B.A.*)
Writing for Screen and Television (BFA)

Annenberg School for Communication and Journalism

Broadcast and Digital Journalism (B.A.*)
Communication (B.A.*)
Print and Digital Journalism (B.A.*)
Public Relations (B.A.*)

Ostrow School of Dentistry

Dental Hygiene (B.S.)

School of Dramatic Arts

Theatre (B.A.*)
Theatre (Acting) (BFA)
Theatre (Design) (BFA)
Theatre (Sound Design) (BFA)
Theatre (Stage Management) (BFA)
Theatre (Technical Direction) (BFA)
Visual and Performing Arts Studies (B.A.*)

Viterbi School of Engineering

Aerospace and Mechanical Engineering
Aerospace Engineering (B.S.)
Mechanical Engineering (B.S.)
Optional area of emphasis:
Petroleum Engineering

Astronautics and Space Technology

Astronautical Engineering (B.S.)
Biomedical Engineering
Biomedical Engineering (B.S.)

Optional areas of emphasis:

Biochemical Engineering
Electrical Engineering
Mechanical Engineering

Chemical Engineering

Chemical Engineering (B.S.)
Optional areas of emphasis:

Biochemical Engineering
Environmental Engineering
Nanotechnology
Petroleum Engineering
Polymer/Materials Science

Civil Engineering

Applied Mechanics (B.S.)
Civil Engineering (B.S.)
Optional areas of emphasis:

Building Science
Environmental Engineering
Structural Engineering

Environmental Engineering (B.S.)

Computer Science

Computer Science (B.S.)
Computer Science (Games) (B.S.)
Computer Science/Business Administration (B.S.)
Physics/Computer Science (B.S.)

Electrical Engineering

Computer Engineering and Computer Science (B.S.)
Electrical Engineering (B.S.)

Industrial and Systems Engineering

Industrial and Systems Engineering (B.S.)
Optional area of emphasis:
Information Systems Engineering

Roski School of Fine Arts

Fine Arts (BFA)
Art (B.A.*)

Davis School of Gerontology

Human Development and Aging (B.S.)
Lifespan Health (B.S.)

Dornsife College of Letters, Arts and Sciences

American Studies and Ethnicity

American Studies and Ethnicity (B.A.)
American Studies and Ethnicity (African American Studies) (B.A.)
American Studies and Ethnicity (Asian American Studies) (B.A.)
American Studies and Ethnicity (Chicano/Latino Studies) (B.A.)

Anthropology

Anthropology (B.A.)
Anthropology (Visual Anthropology) (B.A.)
Global Studies (B.A.)

Art History (B.A.)

Biological Sciences

Biochemistry (B.S.**)
Biological Sciences (B.A., B.S.)
Computational Neuroscience (B.S.)
Human Biology (B.A., B.S.)

Chemistry
 Chemistry (B.A., B.S.)
 Chemistry (Chemical Biology) (B.S.)
 Chemistry (Chemical Nanoscience) (B.S.)
 Chemistry (Research) (B.S.)
 Classics (B.A.)
 Comparative Literature (B.A.)
 Earth Sciences
 Earth Sciences (B.A.)
 Geological Sciences (B.S.)
 East Asian Area Studies (B.A.)
 East Asian Languages and Cultures
 East Asian Languages and Cultures (B.A.)
 Linguistics/East Asian Languages and Cultures (B.A.)
 Economics
 Economics (B.A.)
 Economics/Mathematics (B.S.)
 Political Economy (B.A.)
 English
 English (B.A.)
 English (Creative Writing) (B.A.)
 Environmental Studies
 Environmental Science and Health (B.A., B.S.)
 Environmental Studies (B.A., B.S.)
 French and Italian
 French (B.A.)
 Italian (B.A.)
 Gender Studies (B.A.)
 Health and Humanity (B.A.)
 History
 History (B.A.)
 History and Social Science Education (B.A.)
 Law, History and Culture (B.A.)
 Interdisciplinary Studies (B.A.)
 International Relations
 International Relations (B.A.)
 International Relations (Global Business) (B.A.)
 Kinesiology
 Human Performance (B.A.)
 Linguistics
 Linguistics (B.A.)
 Linguistics/East Asian Languages and Cultures (B.A.)
 Linguistics/Philosophy (B.A.)
 Linguistics/Psychology (B.A.)
 Mathematics
 Mathematics (B.A., B.S.)
 Applied and Computational Mathematics (B.A., B.S.)
 Middle East Studies (B.A.)
 Narrative Studies (B.A.)
 Neuroscience
 Neuroscience (B.A., B.S.)
 Computational Neuroscience (B.S.)
 Philosophy
 Linguistics/Philosophy (B.A.)
 Philosophy (B.A.)
 Philosophy, Politics and Law (B.A.)
 Physical Sciences (B.S.)
 Physics and Astronomy
 Astronomy (B.A., B.S.)
 Biophysics (B.S.)
 Physics (B.A., B.S.)
 Physics/Computer Science (B.S.)
 Political Science (B.A.)

Psychology
 Cognitive Science (B.A.)
 Linguistics/Psychology (B.A.)
 Psychology (B.A.)
 Religion
 Interdisciplinary Archaeology (B.A.)
 Religion (B.A.)
 Religion (Judaic Studies) (B.A.)
 Slavic Languages and Literatures
 Russian (B.A.)
 Social Sciences
 Social Sciences (Economics) (B.A.)
 Social Sciences (Psychology) (B.A.)
 Sociology (B.A.)
 Spanish and Portuguese
 Spanish (B.A.)
 Spatial Sciences Institute
 GeoDesign (B.S.)

Keck School of Medicine
 Global Health (B.S.)
 Health Promotion and Disease Prevention Studies (B.S.)

Thornton School of Music

Choral Music (B.A.)
 Composition (B.M.)
 Jazz Studies (B.M.)
 Music (B.A.*)
 Music Industry (B.M., B.S.)
 Performance (Bassoon) (B.M.)
 Performance (Clarinet) (B.M.)
 Performance (Classical Guitar) (B.M.)
 Performance (Double Bass) (B.M.)
 Performance (Flute) (B.M.)
 Performance (French Horn) (B.M.)
 Performance (Harp) (B.M.)
 Performance (Oboe) (B.M.)
 Performance (Organ) (B.M.)
 Performance (Percussion) (B.M.)
 Performance (Piano) (B.M.)
 Performance (Popular Music) (B.M.)
 Performance (Saxophone) (B.M.)
 Performance (Studio Guitar) (B.M.)
 Performance (Trombone) (B.M.)
 Performance (Trumpet) (B.M.)
 Performance (Tuba) (B.M.)
 Performance (Viola) (B.M.)
 Performance (Violin) (B.M.)
 Performance (Violoncello) (B.M.)
 Performance (Vocal Arts) (B.M.)

Division of Occupational Science and Occupational Therapy

Occupational Therapy (B.S.*)

Price School of Public Policy

Policy, Planning and Development (B.S.)

**under the jurisdiction of the Dornsife College of Letters, Arts and Sciences*

***jointly administered*

Minors

Following is a list of academic minors and the schools and/or departments which administer them. All

departments and schools are listed alphabetically in the index by name and alphabetical designations.

Accounting (Leventhal School of Accounting)
 Advertising (Annenberg School for Communication and Journalism)
 American Popular Culture (Dornsife College of Letters, Arts and Sciences, American Studies and Ethnicity)
 American Studies and Ethnicity (Dornsife College of Letters, Arts and Sciences, American Studies and Ethnicity)
 Animation and Digital Arts (School of Cinematic Arts)
 Applied Computer Security (Viterbi School of Engineering, Information Technology Program)
 Applied Theatre Arts (School of Dramatic Arts)
 Arabic and Middle East Studies (Dornsife College of Letters, Arts and Sciences, Linguistics)
 Architecture (School of Architecture)
 Art History (Dornsife College of Letters, Arts and Sciences, Art History)
 Astronautical Engineering (Viterbi School of Engineering, Astronautical Engineering)
 Astronomy (Dornsife College of Letters, Arts and Sciences, Physics and Astronomy)
 Biotechnology (Dornsife College of Letters, Arts and Sciences, Biological Sciences and Chemistry/Marshall School of Business)
 Business (Marshall School of Business)
 Business Economics (Marshall School of Business, Finance and Business Economics)
 Business Finance (Marshall School of Business, Finance and Business Economics)
 Business Law (Marshall School of Business/Gould School of Law)
 Business Technology Fusion (Marshall School of Business)
 Ceramics (Roski School of Fine Arts)
 Chemistry (Dornsife College of Letters, Arts and Sciences, Chemistry)
 Children and Families in Urban America (School of Social Work)
 Cinema-Television for the Health Professions (School of Cinematic Arts/Keck School of Medicine, Preventive Medicine)
 Cinematic Arts (School of Cinematic Arts)
 Classics (Dornsife College of Letters, Arts and Sciences, Classics)
 Communication and the Entertainment Industry (Annenberg School for Communication and Journalism)
 Communication Design (Roski School of Fine Arts)
 Communication Law and Media Policy (Annenberg School for Communication and Journalism)
 Comparative Literature (Dornsife College of Letters, Arts and Sciences, Comparative Literature)
 Computational Biology and Bioinformatics (Dornsife College of Letters, Arts and Sciences, Biological Sciences)
 Computer and Digital Forensics (Viterbi School of Engineering, Information Technology Program)
 Computer Science (Viterbi School of Engineering, Computer Science)
 Construction Planning and Management (Viterbi School of Engineering, Civil Engineering/Price School of Public Policy)
 Consumer Behavior (Marshall School of Business)

Craniofacial and Dental Technology (Ostrow School of Dentistry/Viterbi School of Engineering, Biomedical Engineering/Dornsife College of Letters, Arts and Sciences, Biological Sciences)	Geohazards (Dornsife College of Letters, Arts and Sciences, Earth Sciences)	Mathematical Finance (Dornsife College of Letters, Arts and Sciences, Mathematical Finance)
Critical Approaches to Leadership (Dornsife College of Letters, Arts and Sciences, Interdisciplinary Studies)	German (Dornsife College of Letters, Arts and Sciences, German)	Mathematics (Dornsife College of Letters, Arts and Sciences, Mathematics)
Cultural Anthropology (Dornsife College of Letters, Arts and Sciences, Anthropology)	Global Communication (Dornsife College of Letters, Arts and Sciences, International Relations/Annenberg School for Communication and Journalism)	Medical Anthropology (Dornsife College of Letters, Arts and Sciences, Anthropology)
Cultural Competence in Medicine (Keck School of Medicine, Preventive Medicine)	Global Health (Keck School of Medicine, Preventive Medicine)	Middle East Studies (Dornsife College of Letters, Arts and Sciences, International Relations)
Cultural Studies (Dornsife College of Letters, Arts and Sciences, English)	Health Care Studies (Keck School of Medicine, Medical Education)	Music Industry (Thornton School of Music)
Cultures and Politics of the Pacific Rim (Dornsife College of Letters, Arts and Sciences, East Asian Languages and Cultures)	Health Communication (Keck School of Medicine, Preventive Medicine)	Music Recording (Thornton School of Music)
Dance (Kaufman School of Dance)	Health Policy and Management (Price School of Public Policy)	Musical Studies (Thornton School of Music)
Digital Studio (Roski School of Fine Arts)	History (Dornsife College of Letters, Arts and Sciences, History)	Musical Theatre (Thornton School of Music)
Digital Studies (School of Cinematic Arts)	Human Resource Management (Marshall School of Business)	Natural Science (Dornsife College of Letters, Arts and Sciences, Biological Sciences)
Drawing (Roski School of Fine Arts)	Human Rights (Dornsife College of Letters, Arts and Sciences, Political Science)	Neuroscience (Dornsife College of Letters, Arts and Sciences, Neuroscience)
Early Modern Studies (Dornsife College of Letters, Arts and Sciences, English)	Individuals, Societies and Aging (Davis School of Gerontology)	News Media and Society (Annenberg School for Communication and Journalism)
East Asian Area Studies (Dornsife College of Letters, Arts and Sciences, East Asian Area Studies)	Innovation: The Digital Entrepreneur (Viterbi School of Engineering, Information Technology Program)	Nonprofits, Philanthropy and Volunteerism (Price School of Public Policy/Dornsife College of Letters, Arts and Sciences, International Relations/Annenberg School for Communication and Journalism)
East Asian Languages and Cultures (Dornsife College of Letters, Arts and Sciences, East Asian Languages and Cultures)	Interactive Media and the Culture of New Technologies (Annenberg School for Communication and Journalism)	Nutrition and Health Promotion (Keck School of Medicine, Preventive Medicine)
Economics (Dornsife College of Letters, Arts and Sciences, Economics)	Interactive Multimedia (Viterbi School of Engineering, Multimedia and Creative Technologies)	Occupational Science (Occupational Science and Occupational Therapy)
Engineering Management (Viterbi School of Engineering, Industrial and Systems Engineering)	Interdisciplinary Archaeology (Dornsife College of Letters, Arts and Sciences, Religion)	Operations and Supply Chain Management (Marshall School of Business)
Engineering Technology Commercialization (Viterbi School of Engineering, Computer Science)	International Policy and Management (Dornsife College of Letters, Arts and Sciences, International Relations/Price School of Public Policy)	Organizational Leadership and Management (Marshall School of Business)
English (Dornsife College of Letters, Arts and Sciences, English)	International Relations (Dornsife College of Letters, Arts and Sciences, International Relations)	Painting (Roski School of Fine Arts)
Enterprise Information Systems (Viterbi School of Engineering, Information Technology Program)	Iranian Studies (Dornsife College of Letters, Arts and Sciences, Middle East Studies)	Performing Arts Studies (School of Dramatic Arts)
Entrepreneurship (Marshall School of Business)	Italian (Dornsife College of Letters, Arts and Sciences, French and Italian)	Petroleum Engineering (Viterbi School of Engineering, Petroleum Engineering)
Environmental Chemistry and Sustainability (Dornsife College of Letters, Arts and Sciences, Chemistry)	Jazz Studies (Thornton School of Music)	Philosophy (Dornsife College of Letters, Arts and Sciences, Philosophy)
Environmental Engineering (Viterbi School of Engineering, Civil Engineering)	Jewish American Studies (Dornsife College of Letters, Arts and Sciences, American Studies and Ethnicity)	Philosophy for Business, Law and the Professions (Dornsife College of Letters, Arts and Sciences, Philosophy)
Environmental Health (Keck School of Medicine, Preventive Medicine)	Judaic Studies (Dornsife College of Letters, Arts and Sciences, Judaic Studies/Hebrew Union College)	Photography (Roski School of Fine Arts)
Environmental Studies (Dornsife College of Letters, Arts and Sciences, Environmental Studies)	Kinesiology (Dornsife College of Letters, Arts and Sciences, Kinesiology)	Photography and Social Change (Dornsife College of Letters, Arts and Sciences, Anthropology/Annenberg School for Communication and Journalism)
Ethics and Moral Philosophy (Dornsife College of Letters, Arts and Sciences, Philosophy)	Korean Studies (Dornsife College of Letters, Arts and Sciences, East Asian Languages and Cultures)	Physics (Dornsife College of Letters, Arts and Sciences, Physics and Astronomy)
Folklore and Popular Culture (Dornsife College of Letters, Arts and Sciences, Anthropology)	Landscape Architecture (School of Architecture)	Playwriting (School of Dramatic Arts)
Forensics and Criminality (Dornsife College of Letters, Arts and Sciences, Sociology)	Latin American Studies (Dornsife College of Letters, Arts and Sciences, Spanish and Portuguese)	Political Organizing in the Digital Age (Dornsife College of Letters, Arts and Sciences, Political Science and International Relations/Viterbi School of Engineering, Information Technology Program/Annenberg School for Communication and Journalism/Price School of Public Policy)
French (Dornsife College of Letters, Arts and Sciences, French and Italian)	Law and Public Policy (Price School of Public Policy)	Political Science (Dornsife College of Letters, Arts and Sciences, Political Science)
Game Animation (School of Cinematic Arts, Interactive Media)	Law and Society (Dornsife College of Letters, Arts and Sciences, Political Science)	Popular Music Studies (Thornton School of Music)
Game Audio (School of Cinematic Arts, Interactive Media)	Linguistics (Dornsife College of Letters, Arts and Sciences, Linguistics)	Professional and Managerial Communication (Annenberg School for Communication and Journalism)
Game Design (School of Cinematic Arts, Interactive Media)	Management Consulting (Marshall School of Business)	Psychology (Dornsife College of Letters, Arts and Sciences, Psychology)
Game Entrepreneurism (School of Cinematic Arts) Interactive Media	Managing Human Relations (Dornsife College of Letters, Arts and Sciences, Sociology)	Psychology and Law (Gould School of Law/Dornsife College of Letters, Arts and Sciences, Psychology)
Gender Studies (Dornsife College of Letters, Arts and Sciences, Gender Studies)	Marketing (Marshall School of Business)	Public Health (Keck School of Medicine, Preventive Medicine)
Geobiology (Dornsife College of Letters, Arts and Sciences, Earth Sciences)	Materials Science (Viterbi School of Engineering, Materials Science)	

Race, Ethnicity and Politics (Dornsife College of Letters, Arts and Sciences, Political Science)
 Real Estate Finance (Marshall School of Business)
 Real Estate Development (Price School of Public Policy)
 Religion (Dornsife College of Letters, Arts and Sciences, Religion)
 Resistance to Genocide (Dornsife College of Letters, Arts and Sciences, History)
 Russian (Dornsife College of Letters, Arts and Sciences, Slavic Languages and Cultures)
 Russian Area Studies (Dornsife College of Letters, Arts and Sciences, Slavic Languages and Cultures)
 Science, Health and Aging (Davis School of Gerontology)
 Science, Technology and Society (Dornsife College of Letters, Arts and Sciences, Sociology)
 Science Visualization (School of Cinematic Arts)
 Screenwriting (School of Cinematic Arts)
 Sculpture (Roski School of Fine Arts)
 Social Entrepreneurship (Marshall School of Business)

Sociology (Dornsife College of Letters, Arts and Sciences, Sociology)
 Songwriting (Thornton School of Music)
 Southeast Asia and its People (Dornsife College of Letters, Arts and Sciences, Anthropology)
 Spanish (Dornsife College of Letters, Arts and Sciences, Spanish and Portuguese)
 Spatial Studies (Dornsife College of Letters, Arts and Sciences, Spatial Sciences Institute)
 Sports Media Studies (Annenberg School for Communication and Journalism)
 Statistics (Dornsife College of Letters, Arts and Sciences, Mathematics)
 Substance Abuse Prevention (Keck School of Medicine, Preventive Medicine)
 Theatre (School of Dramatic Arts)
 Thematic Approaches to Humanities and Society (Dornsife College of Letters, Arts and Sciences, Thematic Option)
 Theories of Art (Dornsife College of Letters, Arts and Sciences, Philosophy)

3-D Animation (Viterbi School of Engineering, Information Technology Program)
 3-D Art for Games (Roski School of Fine Arts/School of Cinematic Arts/Viterbi School of Engineering, Computer Science)
 2-D Art for Games (Roski School of Fine Arts/School of Cinematic Arts/Viterbi School of Engineering, Computer Science)
 Two-Dimensional Studies (Roski School of Fine Arts)
 Urban Policy and Planning (Price School of Public Policy)
 Video Game Design and Management (Viterbi School of Engineering, Information Technology Program)
 Video Game Programming (Viterbi School of Engineering, Computer Science and Information Technology Program)
 Visual Culture (Dornsife College of Letters, Arts and Sciences, Art History)
 Web Technologies and Applications (Viterbi School of Engineering, Information Technology Program)

International Study Options

International Study Programs

USC's undergraduate international study programs, many of which are administered by the Dornsife Office of Overseas Studies, enable students to learn in a different educational and cultural context for a semester or academic year. Some of the programs require a background in the language of the host country; others are conducted entirely in English. Units earned are considered USC units and affect residency in the same manner. However, overseas courses are not offered for general education credit. Students receive regular USC credit and may apply financial aid and scholarships to the semester and year programs described here. The semester and year programs detailed below are offered through the Dornsife Office of Overseas Studies unless they are identified as being offered by the Annenberg School for Communication and Journalism. Please visit the Dornsife Office of Overseas Studies located in the College House (CLH), Room 201, call (213) 740-3636, email overseas@usc.edu or visit dornsife.usc.edu/overseasstudies for more information. The Dornsife Office of Overseas Studies can also direct students to various academic units that offer summer or short-term international programs for undergraduates.

Argentina

Fall Semester in Buenos Aires

This semester program offers students the opportunity to study Latin American culture and study at the Universidad de San Andrés, a small liberal arts college in the suburbs of Buenos Aires. Students will live and learn in this vibrant metropolis while taking communication courses that count toward major credit at USC. Buenos Aires is one of the largest cities in Latin America and will give students the chance to explore the world view of Latin America and how it relates to communication, mass media and the world at large.

The program will immerse students in South American culture, with classes being taught exclusively in Spanish. This program requires a high degree of proficiency in Spanish, both written and oral (2.5 years of

college-level Spanish or the equivalent required), and no special arrangements will be made for students who cannot meet language requirements. An optional five-week preparatory program is offered by the Universidad de San Andrés for students who need to strengthen their Spanish skills. For further information, contact the Annenberg School for Communication and Journalism, Room 140, call (213) 821-2717, email ascintl@usc.edu or visit annenberg.usc.edu/international.

Australia

Semester or Year in Brisbane

The University of Queensland (UQ) is one of Australia's premier higher education institutions. Brisbane, with more than one million residents, is Australia's third-largest and fastest-growing city. USC undergraduates enroll in regular university courses in a wide variety of subjects. Courses are available in the humanities, social sciences, science and engineering. Kinesiology majors can take courses for major credit. Students may choose to live on or off campus.

Semester or Year in Canberra

Located in the capital city of Canberra, the Australian National University (ANU) offers USC undergraduates the opportunity to study alongside Australian students for a semester or year. Courses are available in the schools of arts and social sciences, Asian studies, economics and commerce, engineering and computer science, law and science. Fine arts majors may pursue studio arts courses at the ANU School of Art. Students live in university-affiliated residence halls.

Semester in Canberra (Public Sector Internship)

The Australian National Internship Program, administered by the Australian National University, is available to students who wish to combine academics and practical experience in an internship in Australian Parliament, the Australian Public Service or a nongovernmental organization. Students attend academic seminars and complete a research project in addition to the intern

duties they perform. Students earn 12 USC units for the internship and may take one 4-unit course at ANU. Students live in university-affiliated residence halls. Students must have at least junior standing by the start of the program.

Semester at the University of New South Wales, Sydney

This spring semester program offers students the chance to live and study in Australia's most exciting city. Students choose from a wide variety of courses offered at the University of New South Wales (UNSW), one of Australia's "Group of Eight" premier universities. UNSW is located close to the hub of Sydney's central business district. The program will give students the chance to explore mass media and communication in a challenging environment with a distinct world view, very different from that of the United States. The program is open to all majors. For further information, contact the Annenberg School for Communication and Journalism, Room 140, call (213) 821-2717, email ascintl@usc.edu or visit annenberg.usc.edu/international.

Semester in Yungaburra

Through the School for Field Studies, students spend a semester at a field station in a rain forest in far northern Queensland, home to an amazing variety of exotic birds, plants and wildlife. Students enroll in four courses: Rain-forest Ecology, Principles of Forest Management, Economic Policy and Socioeconomic Values, and Directed Research. The courses involve a great deal of hands-on fieldwork, and the directed research projects provide invaluable experience for students interested in graduate studies or in work dealing with the environment. Students share four- to eight-person cabins.

Botswana

Semester or Year in Gaborone

USC students may enroll in the Arts and Sciences or Community Public Health tracks offered at the University of Botswana (UB) through the Council on

International Educational Exchange (CIEE). Arts and Sciences students directly enroll in UB courses, choosing from a wide array of courses within the faculties of engineering and technology, humanities, natural sciences and social sciences. Students in the Community Public Health track take a combination of specialized CIEE public health courses, a field practicum and direct enrollment courses at UB. All students are required to take Setswana Language and Culture Practicum. As Gaborone is a hub for international development agencies and local NGOs, students are encouraged to commit to regular volunteering assignments, where they engage with the community and gain a greater understanding of contemporary Botswana culture and its role in Southern Africa. Students live in UB residence halls or with a host family in Gaborone.

Brazil

Semester or Year in Salvador da Bahia

Students may spend a semester or year in Salvador da Bahia in northeastern Brazil through the Council on International Educational Exchange (CIEE). Salvador da Bahia, a city of 2.1 million, was once the capital of Brazil and is now considered the center of Afro-Brazilian culture. The semester and year programs begin with several weeks of intensive Portuguese language training before the start of regular university courses. During the semester, students take one Portuguese language class, one or more CIEE courses and several courses alongside Brazilian students at the Universidade Católica do Salvador. All courses are taught in Portuguese. Courses are available in such areas as anthropology, Afro-Brazilian studies, art history, history, Latin American studies, literature, religion, sociology and theatre. Students live with Brazilian host families. Students who have completed four semesters of college-level Spanish or two semesters of Portuguese are eligible to apply.

Semester or Year in São Paulo

Students may spend a semester or year in São Paulo, Brazil, a city of approximately 16 million inhabitants, through the Council on International Educational Exchange (CIEE). The semester and year programs begin with several weeks of intensive Portuguese language training prior to the start of regular university courses. During the semester students take one Portuguese class and several courses alongside Brazilian students at the Pontifícia Universidade Católica de São Paulo. All courses are taught in Portuguese. Courses are available in such disciplines as anthropology, archaeology, communications, economics, history, geography, international relations, linguistics, literature, philosophy, political science and sociology. Students live with Brazilian host families. Students who have completed four semesters of Spanish or two semesters of Portuguese are eligible to apply.

Chile

Semester or Year in Santiago

In conjunction with the Council on International Educational Exchange (CIEE), USC provides the opportunity for study at the Universidad de Chile, the Pontifícia Universidad Católica de Chile, and/or the Universidad Diego Portales, all located in Santiago, the capital of Chile. All courses are taught in Spanish. Courses are available in such disciplines as art, anthropology, economics,

geography, history, international relations, literature, philosophy, political science, psychology, sociology, Spanish, and theology. Students live with Chilean host families. Students who have completed six semesters of Spanish, or the equivalent, are eligible to apply.

China

Semester or Year in Beijing

The program at Peking University in Beijing, offered through the CIEE, provides students with the opportunity to study at China's most prestigious liberal arts institution and to improve their Mandarin Chinese in a city where the standard dialect is used. The focus of the program is intensive language learning, with instruction available at many levels of ability. Students may take one English-taught area studies course. Students who have a very advanced level of Chinese and attend the program in the spring semester may take regular Peking University courses alongside Chinese students in subjects such as Chinese language and literature and international relations. Students live in an international student dorm near the Peking University campus or in a homestay with a Chinese family. Students must have completed three semesters of Mandarin or the equivalent in order to be eligible for the program.

Fall or Spring Semester in Hong Kong

The semester program offers students the opportunity to learn about Chinese culture at the Chinese University in Hong Kong, a bilingual institution. The program also gives students the experience of living in Hong Kong, where they can witness the "one country, two systems" experiment. Courses in English are offered in fine arts, literature, history, Japanese studies, intercultural studies, music, philosophy, computer science, anthropology, economics, international relations, as well as journalism and communication. For students interested in Chinese language, courses are offered in Putonghua (Mandarin) or Cantonese. Extracurricular activities include the opportunity to teach English in rural China, monthly dinner talks with Asian studies specialists and excursions to local areas of interest. Students take five classes worth 3 units each, for a maximum of 15 USC units. Students reside in dormitories with Chinese or international roommates. For further information, contact the Annenberg School for Communication and Journalism, Room 140, call (213) 821-2717, email ascintl@usc.edu or visit annenberg.usc.edu/international.

Semester or Year in Nanjing

Students may spend a semester or year through CIEE in Nanjing, China, a city of more than three million people set along the banks of the Yangtze River. Nanjing University is well-regarded for its liberal arts and social sciences education. Students take 12 units of Mandarin and a 3-unit Chinese studies course. Advanced language students may take courses in Chinese at Nanjing University's Institute for International Students. In the fall semester there is an extended field trip to Yunnan and Sichuan provinces in southwest China, and in the spring semester the extended field trip is to Qinghai and Xinjiang provinces in northwest China. Each student shares a double dorm room with a Chinese student. Students may also choose to live with a host family.

Czech Republic

Semester or Year in Prague

USC provides the opportunity to pursue course work in central European studies and/or film studies in Prague in conjunction with the Council on International Educational Exchange (CIEE), which is housed at Charles University, the premier institution of higher learning in the Czech Republic. Students with an interest in cinema studies may take up to 6 units at the Film & Television Academy of the Performing Arts (FAMU), the oldest film school in Central Europe. Students spend the first two weeks of the semester in an orientation session devoted to intensive language study. Although there is no language prerequisite, all students are required to enroll in conversational Czech. The remainder of the courses may be chosen from such fields as Czech and Central European history, art history, political science, sociology, international relations, Jewish studies and film. Students can opt to live in a dormitory, an apartment or with a Czech host family.

Egypt

Semester or Year in Cairo

Students may study for a semester or year at the American University in Cairo (AUC). About 5,200 students attend AUC, and about 87 percent of the student body is Egyptian. Visiting students may take courses in any of AUC's departments. With the exception of Arabic language and literature courses, the language of instruction at AUC is English. Fields of particular interest to USC students include Arabic language, history, Middle Eastern studies (including international relations and politics) and Egyptology. USC students must have completed at least two semesters of college-level Arabic or the equivalent in order to study at AUC, and they must take at least one Arabic language course at AUC. AUC's campus is located in New Cairo, at the far edge of the Cairo metropolitan area. Visiting students may live in AUC housing on campus or in the Zamalek residence hall in central Cairo. Students who live in central Cairo can expect to commute an hour or more each way to the AUC campus.

England

Spring Semester or Year at the University of Sussex in Brighton

The University of Sussex is especially strong in American studies, cognitive science, computer science, English, international development studies, international relations, neuroscience, biological sciences, psychology and sociology. USC students are directly enrolled in courses with British students. Situated near the seaside resort town of Brighton, the university is only an hour away by train from London and just a half hour from Gatwick Airport. Brighton has a very active arts scene and a lively nightlife, and 10 percent of the residents are university students. Students live in university housing either on or off campus.

Semester or Year at Queen Mary, University of London (Cinematic Arts, Engineering, English, History, International Relations, Narrative Studies, Political Science and Theater Majors Only)

Students in the majors listed directly enroll at Queen Mary in four courses, at least two of which must be for major credit. They may take the remainder of their

courses in any department except law and medicine. Students live in on-campus housing at Queen Mary, located in the East End of London.

Year at the London School of Economics and Political Science (LSE)

Juniors and seniors can spend a year at LSE, which has an outstanding international reputation in all of the social sciences, including anthropology, economics, international history, international relations, philosophy, political science and sociology. Students spend an academic year at LSE on the general course, where they take four yearlong courses alongside British and other international students. More than half of the 6,000 full-time students come from outside the United Kingdom, lending to a very international atmosphere. University housing is located throughout central London. Students must have at least junior standing and a cumulative GPA of 3.3 or higher to be eligible for this program; students in quantitative majors such as economics and mathematics need a 3.5 GPA in major courses.

Semester or Year at King's College, London (Biological Sciences, English, International Relations and Neuroscience Majors Only)

Juniors and seniors in the majors listed above can directly enroll at King's College, one of the top universities in the United Kingdom. King's is strong in biological sciences and offers a special class for pre-med students, which combines classroom study with clinical attachments focusing on different aspects of medical practice. Students interested in security or peace and conflict studies can enroll in the War Studies Department, one of the few university departments in the world devoted to the study of war as a phenomenon. USC students must plan to take at least three courses for major credit to be eligible for this program. University housing is located throughout central London, and students can expect to commute to campus. Students must have a cumulative GPA of 3.3 or higher to be eligible for this program.

Fall or Spring Semester in London (Communication Majors/Minors Only)

Undergraduate communication students may spend a spring or fall semester at the USC London Center, where they enroll in 16 units of upper-division communication course work. In addition to their studies, students tour publishing and broadcasting companies, meet communication executives and government policy-makers and gain exposure to British media, culture and civilization. The program also includes group excursions to such places as Bath, Oxford, Liverpool and Stonehenge. For further information, contact the Annenberg School for Communication and Journalism, Room 140, (213) 821-2717, email ascintl@usc.edu, or visit annenberg.usc.edu/international.

Spring Semester in London (Journalism Majors Only)

USC journalism students may spend a spring semester at City University in London, where they have a privileged vantage of British culture and media. Through social science course work and an intensive and integrated journalism project, they have the opportunity for personal and direct comparison between the relatively structured and governmentally controlled media of the

United Kingdom and the comparatively *laissez-faire* approach to media regulation in the United States. Students earn a total of 8 USC journalism elective units and 8 social science electives units. For further information, contact the Annenberg School for Communication and Journalism, Room 140, (213) 821-2717, email ascintl@usc.edu, or visit annenberg.usc.edu/international.

Spring Semester in London (Public Relations Majors Only)

In the spring of junior year, USC public relations students spend a spring semester at the University of Westminster in London, one of the leading British institutions for the academic and professional study of public relations and media, culture and society. Students will be integrated into the University of Westminster, and will take courses across the four Westminster campus locations around central London. Students will live in the central London district of Bloomsbury, and will be immersed into the public relations and media hub that is London. Students earn a total of 16 units at Westminster; up to 8 USC upper-division journalism elective units toward their public relations major and 8 general elective units. For further information, contact the Annenberg School for Communication and Journalism, Room 140, (213) 821-2717, email ascintl@usc.edu, or visit annenberg.usc.edu/international.

Semester at University College London (UCL) (Art History, Earth Sciences, Geology, Neuroscience and Psychology Majors Only)

Juniors and seniors in the majors listed above may spend a semester at UCL, one of the top universities in the United Kingdom. Students will have a home department at UCL and must take two of their four courses in their home department. Remaining courses can be taken in any department except English (unless one is also an English major) and fine arts. USC students are directly enrolled in courses with British students. University housing is located throughout central London, and students can expect to commute to campus. A GPA of 3.3 or higher is required to be eligible for this program.

Semester or Year in London (Theatre)

In conjunction with Sarah Lawrence College and the British American Drama Academy (BADA), USC theatre majors and minors spend a semester or year in London. The London Theatre program is designed to expose American undergraduates to the rigor of professional British training in acting by helping them improve their ability to perform plays from the classical repertoire and develop techniques and approaches to acting that will stand them in good stead in any role. The program is taught by a faculty that includes some of Britain's most distinguished actors and directors. Students will take courses which include scene study workshops in Shakespeare, high comedy, modern drama, acting in performance, voice, movement, stage fighting, theatre history and dramatic criticism. Students attending a one-year program will add classical acting for stage and screen to their academic program for the second semester. Students live in flats with other program participants. Students must audition for the program, and admission is competitive.

Semester or Year in Norwich

Students may spend a semester or year studying at the University of East Anglia (UEA) in Norwich, England. UEA is a top-ranked British university and offers courses in almost all disciplines; its creative writing, environmental science and American studies departments are of particular note. UEA boasts a sprawling campus with excellent sports facilities and plenty of on-campus housing. The city of Norwich has been voted one of Britain's top cities for quality of life; London is about two hours away by train. Students live on campus in university housing.

France

Year in Paris

USC is a member of the Sweet Briar Junior Year in France Consortium, which enables USC undergraduates to spend an academic year in Paris, taking courses at the University of Paris and other institutions in the Parisian system of higher education. Courses are offered in most areas of the social sciences, the humanities and the arts. The year is preceded by a two-week intensive language orientation in the city of Tours, and internship opportunities are available in the second semester. To apply, students must have completed four semesters of college French or the equivalent.

Semester or Year in Paris

USC students can study for a semester or year on the USC Paris program. In addition to French language courses at the Sorbonne, the program offers USC upper-division French courses and English-taught USC courses in art history and international relations. Students at an advanced level of French may take one or two courses alongside French university students at the Institut Catholique. Courses are available in the following areas: art history, economics, history, international relations and sociology. The program also offers weekend trips to regions such as Normandy and Provence, and day trips to sites of cultural importance near Paris. Students live with French host families. Students must have completed at least two semesters of college-level French.

Spring Semester or Year in Paris (Economics, International Relations and Political Science Majors Only)

USC international relations, political science and economics majors may spend the spring semester or academic year studying at the Institut d'Etudes Politiques de Paris (Sciences Po), one of the top-ranked universities in France. Students choose the English track, English/French track or French track for their courses in international relations, political science and economics. All students take a French language course or elective course taught in French each semester regardless of which track they are in. Students live in private accommodation throughout Paris. To be eligible for this program, students need a 3.3 USC GPA, junior standing, and three to five semesters of French (depending on the track selected). Students must make their own housing arrangements.

Germany

Semester or Year in Berlin

In conjunction with the Institute for the International Education of Students (IES), USC offers a program of study

at the IES Center and Humboldt University, perfectly situated for exploring the city. Students receive intensive German language instruction during the first three weeks of the program, then enroll for the remainder of the semester at Humboldt University (in the spring semester) and/or courses offered at the IES Center (in the fall or spring semester). All courses are taught in German and are available in such disciplines as German economics, history, politics, art history, business, classics, international relations, political science, psychology, religion and sociology. Students are housed in private German homes and apartments. Students must have completed four semesters of college-level German to be eligible for this program.

Spring Semester or Year in Dresden

Students may spend the spring semester or full year with Boston University's Dresden University Studies Program (DRUSP) at Technische Universität Dresden (TUD). Students spend six weeks in an intensive German course prior to the start of the TUD semester. Students who have completed two or three semesters of college-level German are placed in the Level 1 program. Level 1 students take courses in the TUD Department of German as Foreign Language, where courses include German for the Humanities and Social Sciences, German for the Technical and Natural Sciences, Business German, Speaking Practice and intensive multi-skills German courses. Students who have completed four or more semesters of college-level German are placed into the Level 2 program, where they take regular TUD courses. Areas of study available include art history, economics, German literature, history, international relations, philosophy, political science and sociology. Students live in university housing.

Greece

Semester or Year in Athens

Students may spend a semester or year in Athens, Greece, where the ancient world comes alive. A vibrant capital city, Athens is a center of international business and the hub of an efficient and extensive transportation system that makes the beauty of Greece readily accessible. This program is administered by College Year in Athens, and students take courses with other American students. All students are required to enroll in Modern Greek as one of their five courses. The program is organized into three tracks: Ancient Greek Civilization, Byzantine and Modern Greek Studies, and European and East Mediterranean Studies. Students may choose courses from any of the tracks. Students may choose courses from any of the tracks. Students live in simply furnished apartments with other American students.

India

Semester or Year in Delhi

Through the Institute for the International Education of Students (IES), USC undergraduates have the opportunity to spend a semester or year studying in Delhi, India's capital city. At the IES Delhi Center, students take a Hindi language course and courses related to India (taught in English) in the humanities and social sciences. They also have the option of taking some of their courses at Delhi University's Kamala Nehru College or Jawaharlal Nehru University (JNU). As JNU is a graduate-level institution, students wishing to take

courses there should have completed several upper-division undergraduate courses in their major at USC. Both Kamala Nehru College and JNU offer a wide range of courses in the humanities and social sciences. The program includes some daylong and multi-day excursions. The program staff also helps interested students find volunteer opportunities in Delhi. Students live with an Indian host family. Students can expect to commute to classes daily. The fall term runs from mid-July to the beginning of December. The spring term runs from the first week of January to the second week of May.

Ireland

Semester or Year in Galway

Students may spend a semester or year studying at the National University of Ireland, Galway. Located in western Ireland, Galway is the third largest city in the Republic of Ireland and plays a dynamic and pioneering role in theatre, arts and culture. Students may take courses in a wide variety of fields including arts and letters, sciences and engineering. Students are directly enrolled in the university and take courses alongside Irish students.

Israel

Spring Semester or Year in Jerusalem

USC undergraduates may spend a year or spring semester at Hebrew University of Jerusalem (HUJ). The program begins with a three-week pre-semester period of intensive Hebrew language study. Study abroad students are based at HUJ's Rothberg International School (RIS), where the medium of instruction is English. USC students take a semester-long Hebrew language course and English-taught courses at RIS in fields such as archaeology, art history, environmental studies, history, international relations, Jewish and religious studies, Middle East and Islamic studies, literature, political science, neuroscience and psychology. Students may also take Arabic or Yiddish at RIS. Although most regular HUJ courses are taught in Hebrew, there are well over a dozen regular HUJ courses offered in English. All USC students are required to take at least one regular HUJ course taught in English (or in Hebrew for students with advanced language ability). Students live in campus dormitories and may participate in a variety of social and cultural activities at the university. Students must have completed two semesters of college-level Hebrew or the equivalent to participate in this program.

Italy

Semester in Cortona (Fine Arts Majors Only)

USC fine arts majors (B.A. or BFA) may participate in a semester-length intensive studio arts program in the Tuscan hill town of Cortona, Italy with the University of Georgia's Studies Abroad Program. Cortona is located on top of Mont S. Egidio and offers students a rich artistic and historical environment, which includes Etruscan, Roman, Medieval and Renaissance art and architecture. Students must have completed one semester of college-level Italian or the equivalent and several foundation courses in art before attending this program. In Cortona, students study painting, drawing, ceramics, printmaking and sculpture. Mandatory weekend excursions to places of historical and artistic interest in the surrounding area complement the studio classes. Accommodation is provided in a renovated 15th century monastery in Cortona.

Semester or Year in Florence

Through Syracuse University, USC undergraduates have the opportunity to spend a semester or year in Florence studying Italian language and literature, art history, gender studies, history, international relations, political science and studio arts. Classes are taught mostly in English at Syracuse's own study center in Florence. Students with advanced proficiency in Italian may take courses at the University of Florence. Courses are complemented by field trips to cities such as Assisi, Rome and Venice. Students live in homestays with Italian hosts. Studio arts students may also choose to stay in an apartment with other program students. Students must have completed at least two semesters of college-level Italian to be eligible for this program.

Semester in Florence (Animation and Digital Arts Students Only)

John C. Hench Animation and Digital Arts undergraduate majors may participate in a fall semester animation and digital arts program at Studio Arts Centers International (SACI) in Florence, Italy. Students must have completed a minimum of one semester of college-level Italian (two semesters strongly recommended) as well as the required preparatory foundation classes before attending this program. SACI houses students in apartments near the school in the historic center of Florence. While in Florence students participate in weekly open drawing sessions and field trips to sites throughout Italy, including day trips to Pisa, Siena and Lucca, and weekend trips to Rome, Venice and Naples. The program offers the finest and most challenging training to the next generation of digital artists, animators, art historians and art conservators. For more information see SACI's Website at saci-florence.org.

Semester or Year in Milan

Through the Institute for the International Education of Students (IES), undergraduates have the opportunity to spend a semester or year studying in Milan, the commercial and financial center of contemporary Italy. The IES Milan Center is located near the Università Cattolica, IES' main partner institution in Milan. IES Milan offers two tracks: beginning/intermediate Italian and advanced Italian. Students in the beginning/intermediate Italian track enroll in IES area studies taught in English in addition to Italian language courses. IES area studies courses are available in such disciplines as art history, cinema, theatre, history, literature, music, psychology and political science. Students in the advanced Italian track select from IES area studies courses taught in Italian and are encouraged to choose one or two courses from among a wide variety of offerings at several universities in Milan. Students are housed in apartments with American and Italian roommates. Students must have completed two semesters of college-level Italian to be eligible for this program.

Semester in Rome (Classics and Archaeology Majors Only)

USC classics and archaeology majors may study in Rome for a semester at the Intercollegiate Center for Classical Studies (ICCS), a program administered by Duke University. Students study ancient history and archaeology, intermediate and advanced Greek and Latin, basic Italian language, and Renaissance and Baroque art

history. Field trips and extended study tours are essential components of the program. Students live and study at the ICCS Center, a three-story building located a few minutes by bus from the center of Rome.

Japan

Semester or Year in Nagoya

A program of study is available at the Center for Japanese Studies at Nanzan University in Nagoya. The program for international students is well known for its strength in Japanese language training. Nagoya is two hours from Tokyo by bullet train and one hour from the ancient capital city of Kyoto. Courses are available in such disciplines as Japanese arts, business, culture, economics, history, international relations, linguistics, literature, religion and political science. Intensive language training is offered at all levels of proficiency. Students live in Japanese homes or dormitories.

Year at Waseda University in Tokyo

Students may study for an academic year at Waseda University, one of Japan's foremost private institutions of higher learning. The university is located in the Shinjuku area of Tokyo. The academic program at Waseda's School of International Liberal Studies combines Japanese language courses and English-taught lecture courses on the history, culture, literature, arts, politics and economics of Japan and East Asia. The intensive Japanese language courses, offered at eight levels of proficiency, assist students in the development of listening, speaking, reading and writing skills. Students live with Japanese families or in the university's international dormitory.

Spring Semester or Year at Sophia University in Tokyo

Students may spend the spring semester or full year at Sophia University in Tokyo through the Council on International Educational Exchange. Students can experience life in Tokyo and take courses alongside Japanese students and other international students. Sophia University is a top-ranked Japanese university and is conveniently located in west-central Tokyo. Students are enrolled in Sophia's Faculty of Liberal Arts on the main Yotsuya campus, where they take Japanese language courses as well as English-taught courses in Asian Studies (anthropology, art history, comparative literature, economics, history, international relations, linguistics, literature, religion, philosophy, political science and sociology). Students highly proficient in Japanese can take courses in Japanese linguistics. Students live in Japanese homes or privately owned dormitories throughout the Tokyo area.

Semester or Year at Tokyo International University near Tokyo

Founded in 1965, Tokyo International University is located in the city of Kawagoe, about 25 miles from central Tokyo. The university offers a program for international students through the Japanese Studies Program in the International Center. Students enroll in an 8-unit Japanese language course and select the remainder of their courses, taught in English, from anthropology, cinema, culture, economics, history, literature, philosophy and political science. In the spring semester, students with a very advanced level of Japanese may take some courses

in Japanese alongside Japanese students. Students live in Japanese homes.

Jordan

Semester or Year in Amman (Language and Culture Program)

Students may study for a semester or year at the CIEE Study Center at the University of Jordan. This program provides a challenging academic course combined with in-country cultural experience and intensive Arabic study. Students gain a better understanding of the Middle East, with specific emphasis on the Jordanian perspective and experience. All participants take language courses in modern standard and colloquial Jordanian Arabic. In addition, students take two area studies courses taught in English. Fields of study include archaeology, economics, history, international relations, literature, religion, and sociology. Students choose to live with a Jordanian host family or in an apartment with other students. Two semesters of college-level Arabic or the equivalent are required to participate in this program.

Semester or Year in Amman (Arabic Language Program)

This is an intensive Arabic program offered by CIEE at the University of Jordan. Students must have completed at least five semesters of Arabic with a 3.3 GPA or better to be eligible for this program. Students take 6 units of advanced Modern Standard Arabic and a 4-unit course called Advanced Topics in Arabic Conversation, which involves the use of colloquial Jordanian Arabic. Students also take Arabic Writing and Research for 3 units and one 3-unit elective taught entirely in Arabic. Electives include Business Communication, Contemporary Arab Media, Readings in Arabic Literature, Arabic Poetry, and Introduction to Islam. Students participate in a mid-semester Arabic language rural retreat. Students live with a Jordanian host family.

Kenya/Tanzania

Semester at Field Stations in Kenya and Tanzania

Through the School for Field Studies, USC offers undergraduates the opportunity to study for half a semester in Kenya and half a semester in Tanzania. At both sites students live in close proximity to wildlife and local Masai communities on an African savanna. Through conducting research and fieldwork and attending lectures, students explore human-wildlife conflicts from the perspective of local ranchers, communities and park managers. The site in southwestern Kenya is near Amboseli National Park, and the site in northern Tanzania is near Lake Manyara National Park.

The Netherlands

Semester or Year in Amsterdam

The University of Amsterdam (UvA), founded in 1632 as the Athenaeum Illustre, is the largest and one of the most prestigious universities in the Netherlands and has a strong commitment to international education. Through the Council on International Educational Exchange (CIEE), USC students enroll in 15–18 USC units in courses offered by CIEE and the University of Amsterdam. Students may earn USC units in communication and other disciplines such as art history, economics, natural sciences, philosophy, psychology, international relations, political science, gender studies and

sociology. Dutch language courses are available, and students fluent in Dutch, French, German, Spanish or Italian may elect to take courses at the university offered in those languages. Students live in single rooms in dormitories or with local families in central Amsterdam. For further information, contact the Annenberg School for Communication and Journalism, Room 140, (213) 821-2717, email ascintl@usc.edu, or visit our Website, annenberg.usc.edu/international.

New Zealand

Spring Semester in Auckland

This spring semester program offers students the opportunity to travel to New Zealand and experience its liveliest city as well as its natural wonders. Students will study at Auckland University of Technology (AUT), located centrally in Auckland, the largest and most cosmopolitan city in New Zealand. Students take a variety of courses while taking in the sights and sounds of indigenous Maori culture and modern New Zealand. This program is open to all majors. For further information, contact the Annenberg School for Communication and Journalism, Room 140, (213) 821-2717, email ascintl@usc.edu or visit annenberg.usc.edu/international.

Semester or Year in Dunedin

Founded in 1869, the University of Otago is the oldest established university in New Zealand. It has an international reputation for the quality of its teaching and research. Study abroad students are able to take a broad range of subjects across the university's four academic divisions: commerce, health sciences, humanities and sciences. Students majoring in anthropology, English, theatre, cognitive science, psychology, and natural and environmental sciences will find strong programs offering a wide variety of courses. Kinesiology students can take classes in the physical education department at Otago. The university offers a true campus lifestyle and the city of Dunedin, in which the university is located, offers a rich cultural life as well as proximity to outdoor activities. Students live in university-affiliated apartments.

Nicaragua

Semester in Managua

USC students may participate in the Revolution, Transformation, and Civil Society program run by the School for International Training (SIT). Throughout the program, lectures and field visits illustrate how social and political movements, including women's movements, are responding to both domestic and external influences, including U.S. foreign policy. Students are based in Managua, where they study Spanish intensively and take an interdisciplinary course that includes Nicaragua's political history, social movements, civil society, economics and development. Students participate in extended educational excursions to a rural agricultural cooperative in northern Nicaragua, the Caribbean coast and El Salvador. They are introduced to field study methods and dedicate several weeks to completing an independent study project toward the end of the semester. All courses are conducted in Spanish. Students must have completed three semesters of college-level Spanish and be able to follow course work in Spanish in order to be eligible for the program.

Northern Ireland

Spring Semester in Belfast

Trinity College Dublin offers USC undergraduates a spring semester peace and conflict studies program in Belfast, Northern Ireland. Trinity College Dublin's Irish School of Ecumenics (ISE) has a branch campus in Belfast, which is an ideal location for the in-depth study of peace and conflict. Students take three courses — Conflict and Conflict Resolution, Social and Political Reconciliation, and Lessons from the Peace Process in Northern Ireland, for a total of 15 USC units. The program includes several field trips and conflict resolution workshops in Ireland as well as a trip to either the International Criminal Court in The Hague, Netherlands or to the United Nations in Geneva, Switzerland. This program is well-suited for students interested in peace and conflict studies, political science, international relations, sociology, history and religion, as well as students with a general interest in Ireland. Students must have a 3.3 GPA and must have completed two years of university study prior to participation in the program.

Russia

Semester or Year in St. Petersburg

USC offers undergraduates a semester or yearlong opportunity to study at St. Petersburg State University through CIEE. Students with two or more semesters of Russian can participate in the Russian Area Studies Program, which is ideal for students of history, international relations and political science. The Russian Language Program is for students with four or more semesters of Russian and focuses on language, literature and Russian culture. Students have their own room with a Russian family in a private apartment. The program includes many day trips to important sites and overnight excursions to locations such as Moscow, Novgorod, the Pskov region and Tallinn (Estonia).

Scotland

Semester or Year in Edinburgh

The University of Edinburgh was founded in 1583 and offers excellence in teaching and research over a wide range of disciplines. USC students are directly enrolled in courses with British students. Courses are available in more than 50 disciplines including archaeology, architecture, biological sciences, classics, computer science, ecology, economics, engineering, international relations, linguistics, mathematics, physics, psychology and religious studies. USC students live in university residence halls, student houses or university flats.

Semester in Edinburgh (Political Internship)

The University of Edinburgh offers qualified undergraduates the opportunity to serve as interns to Members of the Scottish Parliament (MSPs). During the first five weeks of the program, students enroll in courses that provide a background in British and Scottish politics and government. Following completion of the course work, students will be assigned to an MSP, under whose direction they complete a 10-week internship and research project. This program is highly competitive;

strong candidates should have taken at least two political science or international relations courses and have internship experience, preferably in politics. Students can earn 13.5 USC units on this program.

South Africa

Semester or Year in Cape Town

Students may spend a semester or year studying at the University of Cape Town (UCT) through the Council on International Educational Exchange. Situated on the southern tip of Africa, Cape Town is a vibrant multicultural city and is also a microcosm of the challenges facing the country: how to successfully operate within a global economy while at the same time grappling with the vast socioeconomic inequalities that are the legacy of the colonial and apartheid past. All program participants are required to take at least one course with specific African content. Courses may be taken in all UCT faculties except health sciences and law. Students live with South African or other international students in residence halls, with other American students in apartments close to campus, or with a South African host family. Students must have at least junior standing at the start of the program.

Fall or Spring Semester in Durban

USC students may participate in the Community Health and Social Policy program run by the School for International Training (SIT). The program is based in the city of Durban in the KwaZulu-Natal province, a hub for health teaching, research and practice in both Western and traditional healing systems. Through extensive field visits, lectures and an independent research project, students examine the historical, political, economic, cultural and geographic forces that shape the history of public health interventions in South Africa. Students are introduced to field study methods and spend the last several weeks of the semester completing an independent study project. Students also enroll in intensive Zulu language study, which emphasizes speaking and comprehension skills through classroom and field instruction. Applicants' course work should be related to the health and science fields.

South Korea

Semester or Year in Seoul

Students who have completed two semesters of college-level Korean have the opportunity to spend a semester or year at Yonsei University in Seoul. Students enroll in a Korean language course and two or three English-taught Asian studies courses available from the following areas: anthropology, art history, business, economics, history, international relations, literature, philosophy, politics, religion, and sociology. Students live in the international student dormitory on campus.

Spain

Semester or Year in Bilbao

USC offers undergraduates the opportunity to study for either a semester or year at the University of Deusto, which was founded by Jesuits in 1886 and is among

Spain's top universities. Bilbao is considered the financial and cultural center of the Basque country in northern Spain. Students with two to four semesters of Spanish focus on intensive language study and take additional course work in Spanish, Basque and European studies. Students with five or more semesters of Spanish may take some courses alongside degree-seeking Deusto students. Students may choose to live in dormitories or homestays.

Semester or Year in Madrid

USC offers its own fall and spring semester program in Madrid. Based at a study center in central Madrid, students may take regular USC courses in art history, history, international relations, political science and Spanish. These courses are taught mostly by local faculty and some are taught in English. The program offers a strong cultural component including several excursions to different regions of Spain and day trips to sites near Madrid in addition to outings to cultural events in Madrid. For enhanced cultural insight, students live in a homestay with Spanish hosts.

Taiwan

Semester or Year in Taipei

USC students may spend a semester or year studying at National Chengchi University in Taipei, Taiwan, through the Council on International Educational Exchange. Students study Mandarin intensively and take one English-taught interdisciplinary core course about Taiwan or an additional Chinese course. Students live in dormitories with Chengchi University students or in a homestay. The program offers one of the best opportunities to understand the contemporary economic, political and cultural issues facing this dynamic Pacific Rim island.

Other Programs

Units other than Dornsife that offer semester and year international study programs for undergraduates include the Annenberg School for Communication and Journalism (see pages xx and xx), the School of Architecture (see page xx), the Marshall School of Business (see page xx) and the Viterbi School of Engineering (see page xx). These schools and Dornsife also offer short-term international programs. Dornsife, for example, offers departmental summer programs and research-based, faculty-led Problems Without Passports programs.

Non-USC Programs

Students who wish to participate in a non-USC approved semester or year overseas study program and receive credit transferable to USC must initiate a Request for Exception to Residency in their academic department or school. Students who wish to earn credit in transfer from a non-USC overseas summer program must request pre-approval of transfer course work on the form available at usc.edu/transfercredit.

Graduate and Professional Education

Admission

Office of Admission and Financial Aid
(213) 740-1111
gradadm@usc.edu
usc.edu/admission/graduate

At the graduate level, admission to graduate and professional programs is granted by the dean of the school conferring the degree. However, only a letter from the university's Office of Graduate Admission constitutes an official offer of admission; correspondence with department chairs or individual faculty members does not constitute admission.

The University of Southern California admits qualified men and women as students regardless of race, color, religion, gender, national origin, age, handicap, sexual orientation or status as a disabled veteran. After admission, students are accorded equal rights to participate in all university-sponsored programs and activities. The university does not discriminate on the basis of race, color, religion, gender, national origin, age, handicap, sexual orientation or status as a disabled veteran in the administration of its educational policies, scholarship and loan programs, athletics and other student activities.

Application

The USC Application for Graduate Admission should be used by all applicants to all programs except law, medicine and some professional programs in the schools of dentistry and pharmacy. Applicants should confirm application requirements with their intended school or academic program before application submission.

Online Graduate Programs

Admission to the University of Southern California's online graduate programs is offered to candidates meeting the university's admission standards. USC's online programs are designed to be as rigorous and comprehensive as their traditional on-campus counterparts. Official offers of admission to these programs will come directly from the administering school or college.

Prospective online program students must submit an application for admission, application fee, official academic records and supplemental documents as required by their intended program. Applicants are encouraged to contact the department or school to which

they are applying for further program information and additional requirements.

Applicants with Disabilities

In compliance with the Rehabilitation Act (Section 504) and the Americans with Disabilities Act Amendments Act (ADAAA), USC offers equal access to its degree programs to academically qualified applicants with physical, psychological or learning disabilities. Applicants will be expected to have demonstrated by their record in a college preparatory high school curriculum, or in an appropriate transferable college course of study, that they can perform well in a competitive academic environment. See page xx and page xx for a discussion of possible accommodations. USC is committed to providing appropriate, reasonable accommodations to students with disabilities.

Retention of Records and All Application Documents

All documents and credentials submitted to the Office of Admission become the property of the university and cannot be returned to the student or duplicated for any purpose.

Conditional Admission

The minimum standard for graduate admission is a U.S. bachelor's degree, or its equivalent, from a regionally accredited institution or ministry of education recognized institution. The Graduate School and some professional schools have additional minimum requirements for applicants seeking degrees. Conditional admission status is applied to those students who have not yet met all requirements for admission to full graduate status or who have not filed all relevant documents with the appropriate school or department. Students admitted in this status must satisfy their conditions by the end of the first term of enrollment, or within the time period deemed appropriate by the department or Office of Degree Progress. Students who fail to satisfy their conditions of admission will not be allowed to register for classes.

Students who have been conditionally admitted for academic requirements must complete at least 6 units of graduate level course work with no grade below a B in each class, and must be recommended for regular

admission by a faculty committee. Once those conditions have been met, the department chair can authorize registration for the second semester. If the conditions are not met, the student may be dismissed from the program.

Individual exceptions must be approved by the dean of the degree-conferring unit.

Doctoral Admission with Advanced Standing

Some doctoral programs at USC admit students with Advanced Standing (entry with an appropriate completed graduate degree from an accredited institution).

A minimum of 36 units of course work beyond the first graduate degree, exclusive of 794 Doctoral Dissertation preparation, is required for the doctoral degree if students are admitted with Advanced Standing. Additional course work may be required if deemed necessary by the student's faculty. See Doctoral Admission with Advanced Standing in the Graduate School section on page xx.

Admission to Candidacy

Admission to graduate study does not imply admission to candidacy for an advanced degree and gives no right or claim to be so admitted. Candidacy is determined after the student has demonstrated the ability to do graduate work with originality and independence at USC.

University Faculty

Faculty members shall not be candidates for degrees in the same schools in which they have appointments. In addition, assistant professors on the tenure track should not simultaneously be candidates for degrees anywhere at the university. Individual exceptions to either of these policies may be made only with the approval of the provost or of a special committee appointed by the president. Individual exceptions are considered when the individual submits a request for tuition waiver, which is forwarded for approval to the vice provost for faculty affairs. The form should be accompanied by a memo from the dean of the school. For candidacy within the same school, the dean's memo explains how conflict of interest issues will be dealt with; for assistant professors on the tenure-track, the memo explains how pursuit of the

degree will advance rather than detract from meeting the criteria for tenure.

The Graduate School

The Graduate School establishes and monitors the standards under which students are admitted for study in degree programs under its jurisdiction. An alphabetical listing of degree programs by school can be found under Degree Programs on page xx of this section. That listing also indicates the specific degrees which are conferred by the Graduate School. Details of admission standards are provided in the Graduate School section of this catalogue and in the sections of schools and departments providing the curricula for these programs.

Professional Master's and Doctoral Degrees

Details of admission standards to professional degrees available at USC are detailed in appropriate school listings. See page xx for a list of degree programs.

Dual Degree Programs

Applicants wishing to pursue a dual degree program offered by the university must apply separately to each degree program, meet the admission requirements of each school, and be admitted by both academic units. Applicants to a professional degree program should consult the particular school for information on admission requirements and programs of study.

Admission of International Students

The University of Southern California has an outstanding record of commitment to international education. From a small presence during our early history, our international enrollment grew to an average of 200 students by the 1930s. After declining international enrollments in the years surrounding World War II, USC began rebuilding and in 1951 began providing specialized admission services to international students. By 1964, more than 1,000 international students were enrolled at USC. Today, the Office of Graduate Admission serves thousands of prospective students each year by providing both general and specialized information and by maintaining the expertise necessary to evaluate academic records from the various educational systems around the world. The Office of Graduate Admission also issues the required certificates of eligibility (I-20 or DS-2019) to admitted students so that they can apply for a student or scholar visa to enter the United States.

At USC, an international student is an individual of foreign nationality who will be entering or has already entered the United States with a student visa. However, students already residing in the U.S. and holding other non-immigrant visas (such as E2, H1 or L2) are also international students. International students do not qualify for need-based financial aid. U.S. permanent residents, naturalized U.S. citizens and U.S. citizens residing abroad and attending school outside the United States are not considered to be international students and are eligible for need-based financial aid.

Admission

International applicants (those who are or will be in the United States on non-immigrant visas) are required to submit the following documents:

- (1) Application for Admission;

- (2) Application fee paid by credit card, check or money order drawn on a U.S. bank in U.S. currency and made payable to the University of Southern California must accompany the application; the fee is non-refundable and cannot be deferred;

- (3) Scores on all examinations required for admission (e.g., GRE, GMAT, TOEFL, IELTS, etc.) sent to USC by the testing agency;

- (4) One official copy of academic records with certified English translation;

- (5) Documented evidence of financial support with a passport copy (see financial guarantee statement);

- (6) Letters of recommendation.

Additional information may be required by the academic departments. General admission guidelines are available by country on the USC Graduate Admission Website and subject to change without prior notice.

Financial Guarantee Statement

The United States government requires all international applicants to provide proof of ability to pay tuition and living expenses before a formal letter of admission or the forms needed for obtaining a visa will be issued. International students are also required to have health and accident insurance. The cost of university-provided insurance will be added to the student's fees unless he or she presents proof of adequate coverage.

Each applicant relying on personal or family support must furnish, at the time of application, an original financial-guarantee letter — preferably a bank letter — indicating the sponsor's name and address and verifying the ability to pay the annual cost in education-related expenses for the first academic year. This document must be verified by a bank seal. It is crucial for students to submit their financial-guarantee letters with their applications if they wish to receive notification of admission in the timeliest manner possible.

Applicants whose financial support will come from their home governments or other official agencies (e.g., AMIDEAST, IIE, etc.) must submit similarly appropriate documents from their sponsors at the time of application.

International students cannot meet the full amount of their educational expenses by working while in the United States. The U.S. Citizenship and Immigration Services (USCIS) only allows students to work off-campus under limited circumstances, and employment opportunities are further limited by legislation that requires holders of student visas to be full-time students.

Additionally, students must submit a copy of a valid passport.

Deadline for International Applications

Students should send completed applications with the required documents and fee to the Office of Graduate Admission. All international students *must* follow the deadlines in the application for their particular program of study.

Only an admission letter from the Office of Admission grants official admission; correspondence with department chairpersons or individual faculty members does not constitute admission.

Official Document to Enter the United States

The Office of Admission will issue the I-20 (for the F-1 visa) or DS-2019 (for the J-1 visa), whichever is appropriate, for the student to apply for the visa required to enter the United States. Any students entering the United States by means of these documents issued by USC must register for the semester to which they are admitted to USC. Failure to register disqualifies the student from reapplying for one year from that semester to which admitted and the student's absence is reported to the Department of Homeland Security in accordance with the U.S. government's SEVIS regulations.

Registration Requirements for International Students

International students must maintain full-time student status as determined by the Office of International Services and the departmental adviser. Such students are not eligible to be considered students without formal registration and are in violation of immigration laws when not properly registered. Any international student having questions about registration requirements should consult the Office of International Services, Student Union Building 300.

Admission Evaluations

Admission evaluations for international students are completed by the Office of Admission. All official transcripts of previous work completed should be directed to the Office of Admission.

English Language Requirements

Academic success at USC is strongly dependent upon the ability to communicate in English. Listening, speaking, reading and writing proficiency must be well developed in order to assimilate large amounts of difficult material under limited time conditions with full comprehension. Such proficiency is much greater than that required for ordinary everyday living. Therefore, every effort should be made to acquire English proficiency prior to entering the university.

Admitted international students whose first language is not English are normally required to take the International Student English Examination (ISE Exam), administered by the USC Center for Testing and Assessment at the beginning of the first term of study. The examination results determine whether or not students must take special courses in English.

International students may be exempt from USC's ISE Exam through one of the following:

- International students who have completed their entire bachelor's degree programs at regionally accredited universities located in the United States or in another country in which English is both the language of instruction and the only official language of the country.
- Applicants to master's programs who have attained an Internet Based TOEFL (iBT) score of 90, with no less than 20 on each sub-score; or an IELTS score of 6.5, with no less than 6 on each band score.
- Ph.D. applicants who have achieved an Internet Based TOEFL (iBT) score of 100 with no less than 20 on each sub-score; or an IELTS score of 7, with no less than 6 on each band score.

Please note that there is no minimum TOEFL or IELTS scores required for admission.

Teaching Assistantships

All new teaching assistants (TAs) for whom English is a second language must demonstrate their competence in spoken English before assuming classroom or laboratory duties. Normally, new international teaching assistants (ITAs) demonstrate their English proficiency by taking the ITA exam, administered by the American Language Institute (ALI) located on the USC campus.

The exam must be taken before assuming classroom or laboratory duties and no later than the first day of classes. The ITA exam is graded on a scale of 1 to 7. Those who achieve a score of 6 or higher are cleared for classroom duties and have no English requirement. Those who score 5 or 5.5 are cleared for classroom duties, but are required to enroll in an English language course through ALI while performing their ITA responsibilities. Those who score below 5 on the exam are not cleared for classroom duties. These students

are normally required to enroll in an English language course offered by ALI until adequate English proficiency is obtained. For more information, call (213) 740-0079 or visit ALI's Website at dornsife.usc.edu/ali.

Those ITAs denied clearance for teaching duties may have their offer of graduate assistantship withdrawn. An ITA who is denied clearance to teach should immediately seek assistance from the chair of his/her home department or program director.

American Language Institute

Any student not demonstrating adequate English proficiency will be required to enroll in the American Language Institute (ALI) at USC. The ALI provides courses designed to improve an international student's oral and written communication skills in English. The extent to which a student may be required to take courses at the ALI is determined by his or her performance on the International Student English Examination (ISE Exam).

ALI tuition units are charged at the regular university rate. Entering students who need English language

classes should be aware that the ALI course requirements will likely increase the overall cost of their degree program. ALI classes can normally be taken concurrently with a student's other university classes and must be completed at the earliest opportunity.

USC Language Academy

The USC Language Academy intensive English program offers full-time study in academic English and English for specific purposes. Applicants who wish to study English may apply to the USC Language Academy, 950 W. Jefferson Blvd., JEF 206, Los Angeles, CA 90089-1292. For further information about admissions, courses and program dates, visit the academy's Website at usc.edu/langacad or call (213) 740-0080. Students attending the Academy are issued an I-20 by the USC Language Academy for this course of study only. Those who wish to apply to a graduate-level program must complete the USC Graduate Application. A transfer I-20 will be issued upon admission to the University of Southern California.

Financial Aid for Graduate Students

Graduate students at USC benefit from federal financial aid programs administered by the Financial Aid Office and from scholarships, fellowships and assistantships administered by the Graduate School and various academic departments. In support of the university's commitment to diversity, the Office of the Provost provides fellowships to students from groups now underrepresented in doctoral study. Several federal agencies and private foundations offer support for students engaged in research in specific fields of study. In addition, many corporations provide fellowships or tuition reimbursements for their employees. USC also offers an interest-free monthly payment plan and participates in long-term loan programs. Students may apply for one or more kinds of aid, depending on eligibility.

Although international students are not eligible for federal financial aid, they may be eligible for scholarships, fellowships and graduate assistantships offered by their schools or departments. International students should contact their departments directly for information about existing opportunities. International students may also be eligible for some private educational loans.

The Financial Aid Office may change these policies at any time to ensure continued compliance with changes in federal and state regulations governing student financial aid. As a result, students must refer to the current catalogue regulations. Unlike degree requirements, changes in regulations, policies and procedures are immediate and supersede those in any prior catalogue.

Financial Support Through Graduate Fellowships and Assistantships

Prospective and continuing students seeking financial support will find opportunities to fund their graduate study through individual schools and departments and through the Graduate School. In general, fellowships and graduate assistantships are offered only to students pursuing the Ph.D. degree.

Acceptance of Offers of Financial Assistance

USC subscribes to the following resolution of the Council of Graduate Schools in the United States regarding deadlines and acceptance of offers for graduate scholars, fellows, trainees and assistants.

Acceptance of an offer of financial assistance (such as graduate scholarship, fellowship, traineeship or assistantship) for the next academic year by an actual or prospective graduate student completes an agreement that both the student and the university are expected to honor. In those instances in which the student accepts the offer before April 15, and subsequently desires to withdraw, the student may submit in writing a resignation of the appointment at any time through April 15. An acceptance given or left in force after April 15, however, commits the student to not accept another offer without first obtaining written release from the institution to which a commitment has been made. Similarly, an offer by an institution after April 15 is conditional on presentation by the student of the written release from any previously accepted offer.

Graduate Assistantships

Graduate assistantships are awarded each year by departments of the university to Ph.D. students on the basis of scholastic accomplishment, academic promise and competence. They fall under the jurisdiction of the Graduate School. Procedures and practices can be found in *The Graduate Assistant Handbook* on the Graduate School Website. Only students in good academic standing with GPAs of 3.0, acceptable TOEFL or IELTS scores, and who are regularly enrolled in USC graduate degree programs are eligible for appointment as graduate assistants and may be offered a semester-by-semester appointment up to a maximum of one year at a time. All graduate assistants are under direct and assigned supervision of regular faculty members and report regularly on the conduct and performance of their responsibilities to the supervising faculty. These awards include positions as teaching assistants, research assistants

and assistant lecturers. Assistant lecturers may be appointed only with the approval of the vice provost for graduate programs. The *Graduate Assistant Handbook* can be found at usc.edu/schools/GraduateSchool/current_guidelines_forms.html.

Application Procedures and Eligibility Requirements for Federal Financial Aid

Detailed information, application procedures and deadlines for federal financial aid are available online at usc.edu/financialaid. To be eligible for federal financial aid programs, students must be U.S. citizens, permanent residents or other eligible non-citizens; have a valid Social Security number; meet Selective Service registration requirements; enroll at least half-time; meet Satisfactory Academic Progress requirements; and meet all other eligibility requirements. Students must also complete all application requirements by the relevant deadline. With certain exceptions, as noted below, students must be enrolled in a degree-seeking program or eligible certificate program at USC to be eligible for federal financial aid.

Federal Work-Study

The Federal Work-Study program enables eligible students to earn funds through employment either on campus or with an approved off-campus employer. Only full-time (enrolled in eight or more units) students with high financial need who meet all application deadlines are considered for this program.

Federal Loans

Subsidized* and Unsubsidized Federal Direct Stafford Loans and Federal Direct Graduate PLUS Loans are available to eligible students. The Health Professions Student Loan, Loans for Disadvantaged Students and Primary Care Loan programs provide loans to students in the health professions. Federal Perkins Loans may be awarded to eligible students who meet all application deadlines. For details about federal loan programs and

application requirements, visit usc.edu/financialaid/loans.

**Recent changes in federal law will prohibit graduate and professional students from receiving Subsidized Federal Direct Stafford Loans for enrollment periods beginning on or after July 1, 2012.*

Private Financing Programs

Private financing programs are available to help students meet the costs of education by providing long-term financing options. Students should exhaust all federal Title IV assistance available, including the Federal Direct Stafford Loan and the Federal Direct Graduate PLUS Loan, before considering a private student loan program. The repayment terms of federal programs may be more favorable than the terms of private loan programs. Federal student loans are required by law to provide a range of flexible repayment options, including but not limited to, income-based repayment and income-contingent repayment plans, and loan forgiveness benefits, which other student loans are not required to provide. Federal Direct Loans are available to students regardless of income.

Teacher Education Assistance for College and Higher Education (TEACH) Grant

The TEACH Grant is available for students in the Master of Arts, Teaching (MAT) program. The TEACH Grant is awarded to students who intend to teach in a public or private elementary or secondary school that serves students from low-income families. The TEACH Grant Agreement to Serve requires you to teach full-time for at least four years in a qualified position over an eight-year period after you leave the program. If you fail to do so, your TEACH Grant will be converted to a Federal Direct Unsubsidized Stafford Loan with interest charged from the date of disbursement. For more information, please visit studentaid.ed.gov/types/grants-scholarships/teach.

Financial Aid for Enrollment in a Progressive Degree Program

In most cases, students admitted to a progressive degree program will be classified as undergraduate students for financial aid and registration purposes during the first eight semesters of college enrollment, regardless of whether they enroll in undergraduate or graduate courses. Beginning in the ninth semester, students will be considered graduate students for financial aid and registration purposes and are ineligible for undergraduate financial aid. Students are immediately classified as graduate students and are ineligible for undergraduate financial aid once all undergraduate degree requirements have been completed or the undergraduate degree is posted, even if they have completed fewer than eight semesters. Students who receive a research or teaching assistant award before completing eight semesters are classified as graduate students and are ineligible to receive undergraduate financial aid.

Financial Aid for Enrollment in a Certificate Program

Students enrolled at least half time in a graduate certificate program may be eligible for the Federal Direct Stafford Loan and Federal Direct Graduate PLUS Loan if the program has been determined to be eligible for federal

financial aid. Contact your academic department or the Financial Aid Office for information about whether your program qualifies for financial aid.

Financial Aid for Limited Status Enrollment

Students not admitted to a degree-seeking program or eligible certificate program at USC who enroll as limited-status students are not eligible for federal financial aid, unless they meet one of the exceptions noted in the Consortium Agreements and Preparatory Course Work section.

Financial Aid Consortium Agreements

Students admitted to degree-seeking or eligible certificate programs at USC who enroll at another eligible institution in courses applicable to their USC degrees or certificates may have those courses considered in USC's determination of their eligibility for limited federal financial aid. The student's total USC and/or non-USC enrollment must be at least half-time and a financial Aid Consortium Agreement must be completed. Contact the Financial Aid Office for more information.

Visiting students enrolled at USC as limited-status students may be eligible for limited federal financial aid through a Financial Aid Consortium Agreement if: (1) They are admitted to a degree-seeking or eligible certificate program at their home school; (2) their USC courses apply to their degree or certificate; and (3) the student's total USC and/or non-USC enrollment is at least half-time. Contact the Financial Aid Office for more information.

Financial Aid for Students Enrolled in Preparatory Course Work

Students enrolled at least half-time in undergraduate courses required for admission to a degree program may be eligible for limited Federal Direct Stafford Loan funds. For more information, contact the Financial Aid Office.

Withdrawal Implications for Recipients of Financial Aid

During the Drop/Add Period

During the university's published drop/add period, students who drop or reduce their enrollment may be eligible for a 100 percent refund of tuition for classes dropped.

Financial aid recipients must immediately notify the Financial Aid Office in writing when a drop from one or more classes during the drop/add period results in an enrollment status different from that on which their current financial aid eligibility was based. The same applies if one or more classes are canceled.

The Financial Aid Office will review the student's new enrollment and, if appropriate, revise the student's eligibility based on the new enrollment status.

If a financial aid recipient drops from all classes or drops to less than half-time status during the drop/add period, all financial aid awards must be returned to their respective programs. If the student was given financial aid funds for other expenses, he or she will be expected to return those funds to the university.

After the Drop/Add Period

Students who are recipients of Title IV federal student aid are also covered by federal policies. Title IV federal

student aid is awarded to a student under the assumption that the student will attend for the entire period for which the assistance is provided and thereby "earn" the award. When a student ceases academic attendance prior to the end of that period, the student may no longer be eligible for the full amount of federal funds that the student was originally scheduled to receive.

If a Title IV aid recipient withdraws from all classes on or before the session is 60 percent complete, based on the last date of attendance, federal policy requires that any "unearned" Title IV federal financial aid be returned to the U.S. Treasury, even if the student is not entitled to a refund of tuition.

A student is required to immediately notify the Registrar and the Financial Aid Office when he or she stops attending classes. If the student fails to notify either office, it is possible that the 50 percent point in the term will be used to determine the student's last date of attendance, in accordance with federal regulations. If a student withdraws from all classes, the Financial Aid Office will determine if that student's period of attendance resulted in the earning of all federal financial aid awarded for that term. If it is determined that not all the scheduled federal aid has in fact been earned, then the Financial Aid Office will calculate the amount to be returned to the federal financial aid programs. The Financial Aid Office will bill the student via his or her university account for the amount returned. It is the student's responsibility to contact the Cashier's Office to settle the bill.

Additional Responsibilities of Students Who Withdraw

Any time a student withdraws from one or more courses, the student should consider the potential effect on his or her Satisfactory Academic Progress (SAP) status. Please review the SAP section for more information about SAP requirements.

Whenever a student's enrollment drops to less than half time or the student withdraws completely, or if a student takes a leave of absence, he or she must notify the lender or holder of any loans. Student borrowers of federal or university loans must also satisfy exit loan counseling requirements at studentloans.gov.

It is also the student's responsibility upon withdrawal from all classes to notify the Student Financial Services Office, the Housing Services Office, the Transportation Services Office and/or the USCard Office, if the student has charges from these offices on his or her student account. Students who have withdrawn from studies may be entitled to a prorated cancellation of charges from these offices.

Leave of Absence

Financial aid recipients considering a leave of absence should be aware of the financial aid implications. Although obtaining an approved leave of absence from their programs does allow students to re-enroll in the university without formal re-admission, it does not allow them to defer their loan repayment. The university reports student enrollment to the National Student Clearinghouse throughout the academic year. Lenders and federal loan service agencies subsequently query this database to determine if a student has maintained continuous half-time or greater enrollment.

Student Loan Repayment

If students are on a leave of absence from the university, their lender or federal loan service agency will move their loan from an "in-school" status to a grace or repayment status as required. While on a leave of absence, students may be able to postpone repayment by obtaining a deferment or forbearance from their loan servicers as a result of unemployment or economic hardship. Students should contact their loan servicers for more information about loan repayment. Students may review their federal loan history and determine their loan service agencies by visiting the National Student Loan Data System website at nslds.ed.gov. Once they re-enroll at a half-time or greater basis, they may be able to request deferment for "in-school" status.

Tuition Refund Insurance Plan

To complement its own refund policy, the university makes available to students Tuition Refund Insurance, an insurance policy designed to protect the investment students and their families make in education. The Financial Aid Office strongly encourages all financial aid recipients to take advantage of this plan. If a student formally withdraws from all classes after the end of the drop/add period and he or she is covered by Tuition Refund Insurance, the student may receive:

- A credit to his or her student account equal to 100 percent of charges for tuition and mandatory fees, if the withdrawal is the result of documented personal illness or accident; or
- A credit to his or her student account equal to 60 percent of the charges for tuition and mandatory fees, if the withdrawal is the result of a documented mental/nervous disorder.

The Tuition Refund Insurance credit will be applied first to any outstanding charges on the student's university account, including any charges resulting from the return of Title IV federal student aid. Recipients of university and/or federal financial aid will then receive a cash refund equal to the amount of cash payments made to the account plus any loan payments still on the account (after all returns of Title IV aid have been made in accordance with federal policies, if applicable). The remainder of the insurance credit will be used to repay university financial aid grant or scholarship programs.

Brochures about Tuition Refund Insurance requirements and claim forms are available in the Cashier's Office and the Registrar's Office. All questions about the insurance plan should be directed to these offices.

Notes on Federal Policy

Title IV Federal Student Aid

Students are considered recipients of Title IV federal student aid if they have used funds from one or more of the following programs to meet educational expenses for the semester in question: Federal Pell Grants, Federal Supplemental Educational Opportunity Grants (SEOG), Federal TEACH Grants, Federal Perkins Loans, Federal Direct Stafford Loans (Subsidized or Unsubsidized), or Federal Direct Graduate or Parent PLUS Loans.

Period of Enrollment

At USC, the periods of enrollment are generally measured using the session(s) in which the student enrolled on a semester basis, starting on the first day of classes

and ending on the final day of examinations for a given term. For purposes of Title IV federal student aid, any scheduled break of five or more days will not be included in the measurement of the enrollment period. For programs offered in modules (sessions that do not span the entire length of the semester), breaks of more than five days between modules will not be included in the measurement of the enrollment period.

Measurement of Earned Title IV Federal Student Aid

When a student withdraws from all classes, the Financial Aid Office will calculate the percentage of earned Title IV federal student aid using the point of withdrawal. The earnings calculation is based on the number of days of enrollment, up to and including the day of withdrawal, divided by the total number of days in the enrollment period. In most cases, when a total withdrawal is determined to occur on or before the 60 percent point in a semester, some federal aid will need to be returned.

Return of Title IV Federal Student Aid

To satisfy federal regulation, returns to Title IV financial aid programs must be made in the following order:

- Federal Direct Unsubsidized Stafford Loans
- Federal Direct Subsidized Stafford Loans
- Federal Perkins Loans
- Federal Direct PLUS Loans
- Federal TEACH Grants
- Other Title IV Federal Programs

Financial Aid Policy Regarding Falsification of Financial Aid Information

The types of information covered by this policy include all documents and information submitted to apply for and/or receive need-based financial aid, scholarships and private financing funds. These documents and information include, but are not limited to, the following:

- Free Application for Federal Student Aid (FAFSA)
- Student Aid Report (SAR).
- Supplemental Form for Financial Aid/Enrollment and Housing Form
- Student and parent federal income tax forms and other income documentation
- Documentation of U.S. citizenship or eligible non-citizen status
- Documentation of housing/living arrangements.
- Academic documents relating to high school diploma or college course work
- Loan applications, promissory notes and related documentation
- Specific program applications
- Federal Work-Study time sheets
- Any university financial aid forms and related documentation
- Any written, electronic or verbal statements sent to or made to a university employee regarding the student's financial aid application or other financially related documents

The integrity of the documents and the honesty of the information presented through them are critical to the financial aid process. Students should be aware that they will be held responsible for the integrity of any

financial aid information submitted either by them or on their behalf.

If the university determines that a student or parent has provided falsified information, or has submitted forged documents or signatures, the following steps may be taken without prior notification to the student or parent:

(1) An incident report will be filed with USC's Office of Student Judicial Affairs and Community Standards following procedures outlined in the University Student Conduct Code. (The University Student Conduct Code is published in *SCampus*, the student guidebook.) Pending resolution of the complaint, the Financial Aid Office may restrict the distribution of any further aid to the accused student.

(2) If the Financial Aid Office or the student conduct review process finds that a violation has occurred, the consequences may include, but are not limited to, the following:

- The student will be required to make full restitution of any and all federal, state, private and/or university scholarship, grant, loan or work funds to which he or she was not entitled.
- Until full restitution is made, all federal, state and university funds will be withheld from the student, including all funds disbursed in past or in current terms.
- No arrangements will be made with the Cashier's Office or Collections Office on the student's behalf to settle their account. The student will be responsible for all charges incurred on the student's account because of the loss of federal, state or institutional financial aid funds.
- If the student is determined to be ineligible for financial aid because of a basic eligibility criterion, no further federal, state or university funds will be awarded to the student in any future terms of enrollment at the university.
- The student may be ineligible for future participation in some or all financial aid programs for a minimum of one year or longer. In some cases, the student will not be eligible to receive funds from that program in any future terms of enrollment at the university.
- The student will not be awarded funds to replace those lost because a student is considered ineligible due to dishonesty.

(3) In addition to any consequences directly related to the student's financial aid, the student may be assigned disciplinary sanctions as described in the Student Conduct Code (11.80).

(4) As required by federal and state law, the USC Financial Aid Office will report any infraction to the appropriate office or agency. These include, but are not limited to, the U.S. Department of Education Office of the Inspector General, state agencies or other entities that may take whatever action is required by federal and state law. In this report, the Financial Aid Office will describe in detail the incident, the response from the Financial Aid Office and any additional actions taken by or pending with the university.

Satisfactory Academic Progress (SAP) Policy

Purpose of Satisfactory Academic Progress Regulations

To be eligible for federal financial aid, graduate and professional students are required by the U.S. Department of Education (34 CFR 668.34) to maintain Satisfactory Academic Progress toward their degree objectives. USC has established this SAP policy to ensure student success and accountability and to promote timely advancement toward degree objectives.

The following guidelines provide academic progress criteria for all graduate and professional students receiving certain financial aid at USC. Although the requirements for students receiving such financial aid are somewhat more restrictive than for the general student population, they are based on reasonable expectations of academic progress toward a degree. Accordingly, these guidelines should not be a hindrance to any student in good academic standing.

The Financial Aid Office may change these policies at any time to ensure continued compliance with changes in federal and state regulations regarding student financial aid. As a result, students must refer to the current catalogue regulations. Unlike degree requirements, changes in regulations, policies and procedures are immediate and supersede those in any prior catalogue.

Table 1
Programs Subject to Financial Aid SAP Policy

Federal Programs	
Federal Work-Study	Scholarships for Disadvantaged Students
Federal Perkins Loans	Loans for Disadvantaged Students
Federal Direct Loans (Stafford and Graduate PLUS)	Health Professions Student Loans
Federal TEACH Grants	Primary Care Loans

Table 2
Programs Not Subject to Financial Aid SAP Policy

USC and Outside Programs*	
USC Merit Scholarships	USC Alumni Scholarships
USC Topping Scholarships	USC Departmental Awards
USC Assistantships	USC Employee Tuition Assistance Benefits
Sponsored Agency Awards (Including Department of Defense and Veterans Awards)	Outside Agency Scholarships

*Recipients of these awards should contact the awarding agencies/departments for rules governing award retention.

Definition of Satisfactory Academic Progress (SAP)

At USC, to be eligible for financial aid as identified above, you must maintain Satisfactory Academic Progress as defined by all of the following three criteria:

- (1) Meeting a minimum cumulative grade point average requirement (GPA)
- (2) Earning a minimum number of units for credit per semester (Pace of Progression)
- (3) Completing the degree objective within a maximum number of semesters enrolled and a maximum number of units attempted (Maximum Time-Frame Allowance)

Students who fail to meet one or more of the above criteria will be considered to be SAP ineligible for financial aid without an approved, written SAP Appeal. The following will explain each of the three SAP evaluation criteria; SAP Ineligibility and Probation Periods; and the SAP Appeals process in detail.

Grade Point Average Requirement

To maintain Satisfactory Academic Progress, graduate and professional students must maintain a minimum cumulative grade point average of 3.0. In some cases, the University Committee on Curriculum has approved different GPA requirements for professional schools as detailed in Table 3:

Table 3
Exceptional Grade Point Average Requirements for Graduate/Professional Programs

Degree Program	Program of Study Code	GPA Requirement
Doctor of Dental Surgery — DDS	414	2.0
Doctor of Dental Surgery — Advanced Standing Program for International Dentists — DDS	428	2.0
Doctor of Physical Therapy — DPT	979	2.75
Juris Doctor — JD	379	2.7
Master of Laws — LL.M	394	2.7
Graduate Certificate in Financial Analysis and Valuation — GCRT	1340	3.6

Students with No Graduate GPA

Students enrolled in progressive degree programs whose undergraduate degrees have not yet been conferred must maintain a minimum cumulative undergraduate GPA of 2.0.

Students who have no GPA because all their course work has been taken as Credit (C)/No Credit (NC) or Pass (P)/No Pass (NP) are considered to have a sufficient GPA as long as they have no grades of NC or NP. A grade of In Progress (IP) is also considered a passing grade.

Refer to Tables 4 and 5 to understand how specific grades and course types affect students' cumulative grade point averages:

Table 4
Impact of Grades on Graduate Cumulative SAP GPA

Grade Earned	Counted in Grade Point Average
A, B, C, D, F (+/-)	Yes
CR — Credit, P — Pass, IP — In Progress	No
NC — No Credit, NP — No Pass	No
IN — Incomplete	No
IX — Expired Incomplete	Yes
W — Withdrawal	No
UW — Unofficial Withdrawal	Yes
V — Audit	No
MG — Missing Grade	No

Table 5
Impact of Course Type on Graduate Cumulative GPA

Course Type	Counted in Grade Point Average
Preparatory course work (including all undergraduate course work regardless of course level)	Yes
Repeated course work (previous passing grade)	No
Repeated course work (previous failing grade)	Yes (both grades counted)
Transfer course work (pre- and post-matriculation)	No

For more information about grading policy, visit the USC Department of Grades on the Registrar's Website at usc.edu/grades.

Pace of Progression Requirement

To maintain satisfactory progress, graduate students must complete a minimum number of units each semester (Pace) to ensure completion of the degree within the maximum time frame. Pace of Progression is calculated by dividing the cumulative number of credits the student has successfully completed by the cumulative number of credits the student has attempted.

$$\text{Pace of Progression} = \frac{\text{Cumulative units completed}}{\text{Cumulative units attempted}}$$

To be eligible to receive the federal, state and institutional financial assistance detailed in this section, a student is required to successfully complete a minimum of 67 percent of all attempted credits.

$$\text{Pace of Progression} \geq 67\% = \text{SAP eligible for Pace}$$

Review Tables 6 and 7 to understand how grades and course types will affect the Pace of Progression calculation:

Table 6
Impact of Grades on Pace of Progression and Maximum Time-Frame Allowance

Grade Earned	Pace of Progression		Counted Toward Maximum Time Frame
	Units Completed	Units Attempted	
A, B, C, D (+/-)	Yes	Yes	Yes
CR, P, IP	Yes	Yes	Yes
F, UW, IX	No	Yes	Yes
NC, NP, W, MG, IN	No	Yes	Yes
V	No	No	Yes

Table 7
Impact of Course Type on Pace of Progression and Maximum Time-Frame Allowance

Course Type	Pace of Progression		Counted Toward Maximum Time Frame
	Units Completed	Units Attempted	
Graduate-level course work	Yes	Yes	Yes
Preparatory course work (including all undergraduate course work regardless of course level)	Yes	Yes	Yes
Repeated course work (previous passing grade)	Yes	Yes	Yes
Repeated course work (previous failing grade)	Yes	Yes	Yes
Transfer course work (pre- and post-matriculation)	Yes	Yes	Yes

Maximum Time-Frame Allowance

To demonstrate Satisfactory Academic Progress, students must complete their degree objective within a specified amount of time. The time frame will depend on the student's enrollment status and educational objective.

Maximum Units and Semesters

Each program of study has a maximum time frame established in both units and semesters attempted, based on the requirements of the degree program. Students are eligible to receive financial aid until the maximum units or maximum full-time semesters are reached, whichever comes first. All enrolled periods are considered regardless of whether the student has received financial aid.

Refer to Tables 6 and 7 to understand how different grades and course types will be counted against your Maximum Time-Frame Allowance.

Course work transferred to the university in partial fulfillment of the degree requirements will be subtracted from the maximum unit and semester allowance.

Students in authorized dual-degree programs will be granted an increase in the unit and semester allowances commensurate with the additional program requirements.

Solely for the purpose of evaluating the SAP Maximum Time-Frame Allowance, the Financial Aid Office establishes the following guidelines on SAP semesters.

SAP Semesters for Doctoral Students

Each semester in which a doctoral student attempts 3 to 5 units is counted as a half (0.5) SAP semester. Each semester in which a doctoral student attempts 6 or more units is counted as a full (1.0) SAP semester. Semesters in which a doctoral student attempts fewer than 3 units that are not full-time exception courses are not counted as SAP semesters (see Table 8).

SAP Semesters for Master's and Graduate Certificate Students

Each semester in which a master's or graduate certificate student attempts 4 to 7.5 units is counted as a half (0.5) SAP semester. Each semester in which a master's or a graduate certificate student attempts 8 or more units is counted as a full (1.0) SAP semester. Semesters in which a master's or a graduate certificate student attempts fewer than 4 units that are not full-time exception courses are not counted as SAP semesters (see Table 8).

Full-Time Exception Courses

Other than the number of units attempted, there are additional circumstances that confer full-time enrollment status. These include enrollment in 594 Master's Thesis, 794 Doctoral Dissertation, GRSC 800 Studies for the Qualifying Examination and GRSC 810 Studies for the Master's Examination, as well as other courses and programs as determined by the Dean of Academic Records and Registrar. Any semester in which a student attempts a full-time exception course will be counted as 1.0 SAP semester, regardless of the number of units enrolled or concurrent course work.

Maximum Unit Allowance

Students pursuing graduate and professional degrees can apply for financial aid for up to the maximum number of units of course work required for the particular program of study, plus the equivalent units for one full-time semester course load (see Table 8).

Table 8
Full-Time Course Load for Determining Maximum SAP Units and Semesters

Program	Full-Time Course Load
Doctoral programs	6 units or exception course
Master's programs and graduate certificates	8 units or exception course

For certain programs, the full-time course load may vary from 14 to 22 units, based on the average enrollment levels for the program. These programs generally enroll students at the flat rate for tuition.

Maximum Semester Allowance

To determine the maximum number of full-time semesters of aid available for a graduate or professional program of study, divide the number of units required for the particular program by the full-time semester course load for that program according to Table 8.

After rounding up to the nearest whole number, add one additional full-time semester to determine the maximum allowed for the program.

$$\text{Maximum SAP Semesters} = \frac{\text{units required for degree}}{\text{full-time course load}} + 1 \text{ full-time semester}$$

Review the examples to understand how the maximum SAP units and semesters are calculated.

Example 1 Maximum SAP Semester and Unit Calculation for a Doctoral Degree

A doctoral program that requires 60 units for graduation:
 $\text{Maximum SAP Semesters} = \frac{60 \text{ units}}{6 \text{ units}} + 1 \text{ full-time semester}$
 $\text{Maximum SAP Semesters} = 10 + 1 \text{ full-time semester}$
 $\text{Maximum SAP Semesters} = 11 \text{ full-time semesters}$

Example 2 Maximum SAP Semester and Unit Calculation for a Master's Degree or Graduate Certificate

A master's or graduate certificate program that requires 28 units for graduation:
 $\text{Maximum SAP Semesters} = \frac{28 \text{ units}}{8 \text{ units}} + 1 \text{ full-time semester}$
 $\text{Maximum SAP Semesters} = 4 + 1 \text{ full-time semester}$
 $\text{Maximum SAP Semesters} = 5 \text{ full-time semesters}$

*rounded up from 3.5

How Satisfactory Academic Progress is Monitored

The Office of Academic Review monitors the minimum grade point average requirement. The Financial Aid Office monitors Pace of Progression and the Maximum Time-Frame Allowance.

When Satisfactory Academic Progress is Monitored

The Financial Aid Office will monitor Satisfactory Academic Progress for graduate and professional financial aid applicants annually. The evaluation will occur after the end of the summer semester when the summer has been considered part of the prior academic year for financial aid purposes. Students who do not enroll in summer courses or whose summer is considered part of the upcoming academic year will be monitored at the end of the spring semester.

Potential Delay of Disbursements Due to Monitoring of Satisfactory Academic Progress

Financial aid may not be disbursed to a student's account until SAP has been evaluated. The Financial Aid Office cannot complete the SAP evaluation until prior semester grades have been officially posted by the Office of Academic Records and Registrar. Therefore, an otherwise eligible student may experience a delayed financial aid disbursement if grades are not made official before the beginning of the subsequent semester. No exceptions can be made to this process.

Notification of Satisfactory Academic Progress Status

Students who have met Satisfactory Academic Progress requirements will not receive a SAP notification. The Financial Aid Office will notify any student who does not meet Satisfactory Academic Progress requirements via email at the student's USC email address. Students who are notified that they are SAP ineligible for financial aid should consult their academic advisers.

Failure to Maintain Satisfactory Academic Progress

There are no Financial Aid SAP Warning Periods for graduate/professional students.

Students who fail to meet GPA or Pace of Progression standards will be ineligible for financial aid without an approved, written SAP Appeal.

Students who exceed the maximum unit or semester allowance are ineligible for financial aid without an approved, written SAP Appeal.

Students who are academically disqualified from the university are ineligible for further financial aid without readmission to the university and an approved, written SAP Appeal. Students on financial aid SAP Probation who fail to meet the terms of their SAP Contracts are ineligible for financial aid without a second approved, written second SAP Appeal.

Regaining Financial Aid Eligibility

Regaining Financial Aid Eligibility with a Grade Change

Students who have lost financial aid eligibility as a result of insufficient GPA or Pace of Progression can be reinstated by a grade change if the grade change allows them to complete sufficient units and/or improve their GPA to meet stated requirements. The student must notify the Financial Aid Office in writing that the grade has been changed and requirements have been met.

Regaining Financial Aid Eligibility with a SAP Appeal for Maximum Time Frame

Students who need additional time to complete their degrees must meet with their academic adviser to complete a SAP Appeal form. Students must also update their expected graduation date with the Degree Progress Office. The Financial Aid Office may increase the maximum time frame for students who have changed programs, are adding a program or have experienced a one-time extenuating circumstance such as illness or injury that has since been resolved.

Regaining Financial Aid Eligibility with a SAP Appeal for GPA or Pace of Progression

Students may appeal the determination that they are not meeting Satisfactory Academic Progress GPA and Pace of Progression requirements. The following can be considered: extended illness, one-time extenuating circumstances that have since been resolved, and enrollment limitations due to academic advisement.

SAP Appeal Form and Letter

The student and adviser must submit a graduate and professional Satisfactory Academic Progress appeal form with complete supporting documentation to the Financial Aid Office. The SAP Appeal form must contain the specific academic plan for the student that the adviser has approved. For the appeal to be approved, the academic plan must lead to graduation within 150 percent of the published degree time. The student must also provide a written appeal letter that includes the following information/explanation: (a) What caused the work at USC to fall below acceptable standards? Students should think carefully and provide a specific explanation. (b) How have those conflicts been resolved? (c) How will the student maintain good academic standards and progress towards the degree if the appeal is granted?

When to Submit a SAP Appeal

Students may wait until they have been notified by the Financial Aid Office that they are ineligible for financial aid because of a SAP deficiency. SAP Appeals for Maximum Time-Frame Allowance may be submitted at any time, but students should first ensure that the Degree Progress Office has updated their expected graduation term.

SAP Appeals must be submitted before the end of the semester for which the aid is sought. Financial aid cannot be reinstated retroactively for a past semester.

Limitations on Approvals for SAP Appeals

The Financial Aid Office will never increase the Maximum Time-Frame Allowance past 150 percent of the published degree requirements for one graduate/professional degree.

Academic Disqualification and Activity Restrictions that Prevent Registration

Students who are academically disqualified or otherwise prevented from registering for future semesters may submit SAP Appeals. However, those appeals will not be evaluated until the activity restrictions have been resolved.

Notification of SAP Appeal Decisions

SAP Appeals will be evaluated and the Financial Aid Office will notify the student of the decision via email at the student's USC email address.

Financial Aid SAP Probation

Appeals for insufficient Pace of Progression and GPA are approved through the use of a semester-by-semester SAP Contract. Students placed on a SAP Contract are eligible for financial aid on a probationary basis, strictly according to the terms of the contract. While on SAP Probation, the Financial Aid Office will review a student's academic progress each semester to ensure they have met the specific terms of their contract.

The SAP Contract

The contract is an agreement between the student, the academic adviser and the Financial Aid Office where the student commits to following a specific academic plan that leads to graduation. Reinstated eligibility through a contract may alter the type and amount of the financial aid for which a student is eligible. Terms of the SAP Contract may be stricter than the standard SAP regulations cited in this section.

Acceptance of the approved SAP Contract supersedes all other SAP regulations. Any deviation by the student from the terms of the contract will result in the forfeiture of future financial aid eligibility.

Submitting SAP Appeals After Failing SAP Probation

Students on SAP Probation as a result of an approved appeal who fail to meet the terms of their accepted SAP Contract are ineligible for future financial aid. These students may submit a subsequent SAP Appeal. However, these appeals are granted on an exception basis. Students will be required to document specifically the exceptional circumstances that caused them to fail their SAP Contract and how those problems have been resolved.

Financial Aid Application and SAP Appeal Deadlines

Any student who is appealing his or her Satisfactory Academic Progress status must meet all financial aid application deadlines and other eligibility requirements. A SAP Appeal must be submitted before the end of the semester for which the aid is sought. Financial aid cannot be reinstated retroactively for a past semester. As with any type of financial aid appeal, Satisfactory Academic Progress appeals are funded on a funds-available basis.

Course Work Taken Elsewhere

Admitted students receive a transfer credit report showing unit and subject credit granted for graduate courses.

For course work taken at universities within the United States, the Degree Progress Department will prepare the transfer credit report. For course work taken at universities outside the United States, the Graduate Admissions Office will review the academic credentials and the academic department will determine subject credit granted.

Accreditation

The University of Southern California affirms the practice of accreditation of American post-secondary academic

institutions by the six regional accreditation agencies: the Middle States Association of Colleges and Schools, the North Central Association of Colleges and Schools, the New England Association of Schools and Colleges, the Northwest Association of Schools and Colleges, the Southern Association of Colleges and Schools, and the Western Association of Schools and Colleges. Acceptance of course work and/or degrees completed by undergraduate and graduate students applying to the University of Southern California will generally be based on accreditation by these six agencies. Certain graduate schools, seminaries, conservatories and professional institutions of national renown that are not accredited by a regional agency may be considered for graduate

transfer work by the Articulation Office in consultation with the USC department or professional school to which the student is applying.

Acceptance of course work and/or degrees from post-secondary institutions overseas will be based on the recognition and approval of the college or university as a degree-granting institution by the Ministry of Education within the respective country.

Proof of Prior Degree

Students applying for graduate degrees conferred by the Graduate School must hold a baccalaureate degree or its equivalent from an accredited college or university comparable in standard to that awarded

at USC. Students who have earned a master's degree from an accredited U.S. institution with a GPA of 3.0 or higher may have the baccalaureate degree requirement waived after review. Diplomas granted for a preponderance of life experience, portfolio or equivalency examinations are not considered appropriate preparation for acceptance into USC's graduate degree programs and are not the equivalent of USC's undergraduate degrees. Verification of a completed undergraduate degree must be provided before enrollment in a second semester at USC.

Transfer Credit

Transfer of Course Work

The Degree Progress Department in the Office of Academic Records and Registrar determines whether course work taken elsewhere is available for transfer credit. Faculty of the student's degree program determine whether such credit is applicable toward a specific graduate degree, subject to approval by the dean of the degree-conferring unit. The faculty's decision should be made no later than the end of the first year in a master's program or the second year in a doctoral program.

Credit will only be allowed for courses (1) from an accredited graduate school, (2) of a quality of at least 3.0 on a 4.0 grading scale, (3) constituting a fair and reasonable equivalent to current USC course work at the graduate level and (4) logically fitting into the program for the degree. Transfer course work is applied as credit (CR) toward the degree and is not included in the calculation of a minimum grade point average for graduation.

Graduate transfer credit will not be granted for life experience, credit by examination, extension courses not accepted toward a degree by the offering institution, correspondence courses or thesis supervision. Graduate transfer credit will not be granted for course work taken elsewhere after a student has been admitted and enrolled at USC unless the student receives prior written approval from the department. Students may not take

courses elsewhere as a substitute for courses in which they have received grades that fail to meet departmental or university requirements.

Transfer work must have been completed within seven years of admission to a USC master's degree program (or 10 years for a doctoral program) to be applied toward that degree. Departments have the option of reevaluating transfer work when a student is readmitted to a USC graduate degree program. Requests for exceptions should be directed to the dean of the degree program for approval.

The faculty of a degree program may establish limits on the number of transfer credits stricter than those of the university, which follow:

(1) Courses used toward a degree completed elsewhere may not be applied toward a master's degree at USC. If courses were not used toward a completed degree, the maximum number of transfer credits that may be applied toward a master's degree, subject to departmental approval, is: four units in degree programs requiring 24–32 units; eight units in programs requiring 33–40 units; 12 units in programs requiring 41 or more units. Except in formally designated dual degree programs, the same limits apply if a student wishes to transfer credits from any advanced degree previously completed at USC toward a master's degree.

(2) A maximum of 30 units of transfer credit may be applied toward a doctoral degree.

(3) It is not permitted to apply more than 6 units of transfer credit toward a doctoral degree with Advanced Standing. Admission with Advanced Standing is based upon a completed graduate degree. The only course work available for transfer credit is course work taken after completion of that degree. No exceptions are allowed.

(4) A maximum of 4 units of transfer credit may be applied toward an approved dual degree program.

The University Committee on Curriculum (UCOC) must approve policies and procedures for considering

individual exceptions within any specific program of study. Program exceptions to the transfer of course work policies require the approval of the UCOC and are listed in the departmental sections of this catalogue. Departments establishing lower maximum limits may waive their own policy (within the university's limits) by approval of the dean of the degree-conferring unit.

Application of Previous USC Course Work to a Current Degree

USC course work taken prior to matriculation to a current USC degree program must have been completed within seven years of admission or readmission to a master's degree program (or 10 years for a doctoral program) to be applied toward that degree. Exceptions require approval from the vice provost for graduate programs.

Credit Evaluation

The purpose of the evaluation is to verify all previously earned degrees and may list graduate course work completed at other institutions which is available for consideration toward the USC degree. Students who intend to apply transfer course work toward a USC degree program can request a comprehensive credit evaluation through the Degree Progress Department. Only courses with a grade of B (3.0) and above are available for transfer. These courses do not apply toward a specific USC degree unless approved by the student's major department and school.

Concurrent Enrollment

A student in a Graduate School degree program may not enroll for credit at this university and elsewhere simultaneously without advance permission from the dean of the degree program (except for concurrent enrollment at UCLA. See page xx in the Academic Policies section for details). Failure to secure such permission will result in invalidation of course work taken during periods of unauthorized concurrent enrollment.

Requirements for Graduation

Catalogue Regulations, Policies and Procedures

In addition to degree requirements outlined below, undergraduate and graduate students are also subject to current catalogue regulations, policies and procedures. Examples include, but are not limited to, the policies on the grades of incomplete (IN), missing grade (MG) and continuous enrollment for graduate students. Unlike degree requirements, changes in regulations, policies and procedures are immediate and supersede those in any prior catalogue.

Graduation Date

A student will be awarded the graduation date for the term in which degree requirements, including submission of supporting documents, have been met. Although course work may have been completed in a prior term, the degree will be awarded only for the term for which all academic and administrative requirements have been fulfilled. Application for the degree is a requirement for all graduate degrees. Students wishing to change the degree date from that indicated on the STARS report should file a Change of Information card

with the revised degree date. The cards are available in the Degree Progress Department in Hubbard Hall 010. Degrees are not awarded retroactively.

Discontinued Degree Programs

Students pursuing major programs that the university discontinues will be allowed to complete them within a specified time limit. The time limit will be specified at the point of discontinuance of a major program and begins at that point. It is determined according to the student's progress toward degree completion and will not exceed five years for any student.

Closed Record

The academic record of a student who has completed the program of study or ceased attendance is considered closed. Once a student's record is closed, no further additions or changes may be made. This includes, but is not limited to, such things as change of name, registering in additional course work, resolution of marks of incomplete (IN), missing grade (MG), etc.

Degree Requirements

All graduate students must meet both university degree requirements and those degree requirements specific to their program of study to receive an advanced degree. University degree requirements consist of grade point averages, unit, residence and time limit requirements. Degree requirements specific to a student's program of study consist of course, examination and research requirements. University degree requirements and degree requirements specific to the program of study are collectively defined as degree requirements. Graduate students may elect to follow (a) the degree requirements in the catalogue current for the semester of their admission to the degree program or (b) degree requirements in subsequent catalogues as long as they are continuously enrolled (see Continuous Enrollment, page xx). However, they may not mix catalogues. Graduate students who discontinue their enrollment without a leave of absence approved by the dean of the degree program (see Leave of Absence, page xx) will be subject to the degree requirements in effect for the semester of their readmission to the program. Students requesting

exceptions to the catalogue year should petition the dean of the degree program.

Time Limit for Degree Completion

Students must maintain satisfactory progress toward their stated degree objective at all times. Progress is measured from the beginning of the first course at USC applied toward a specified degree, and all requirements for that degree must be completed within a specified time. The maximum time limit allowed for each degree is considerably greater than what is needed to complete all requirements. Departments may set more stringent time limits than those specified in this section.

The time limit for completing the master's degree is five years. The time limit for completing the doctoral degree is eight years. For students who earned an applicable master's degree within five years prior to admission to the doctoral program, the time limit for completing the doctoral degree is six years from the date of admission to the doctoral program. An academic department may grant an extension of one semester at a time, up to a maximum of two years. For Ph.D. students all extensions must also have the approval of the dean of the degree program.

In unusual cases, a student's committee and the department chair may petition the Graduate School for further extensions.

Students who have exceeded the time limit for completing their degree program will not be permitted any further registrations. If granted an extension of time, the dean of the degree-conferring unit will permit registration for the specified period of extension. Approved leaves of absence (up to a total of two years or four semesters) are not counted in the time allowed for completion of degree requirements.

The time limits apply unless otherwise designated by the faculty and previously approved by the University Committee on Curriculum for a particular degree program.

Progressive Degree Programs

Applicants for a progressive degree program must have completed 64 units of course work applicable to their undergraduate degree since graduating from high school. (AP units, IB units and course work taken prior to high school graduation are excluded.) Applicants must submit their application before completing 96 units of course work. Normally, the application is submitted in the fall semester of the third year of enrollment at USC. Applicants do not have to submit GRE scores but are expected to have at least a 3.0 GPA at the time of application.

The Application for Admission to a Progressive Master's Program must be approved by the deans of the bachelor's and the master's degree-granting schools at USC and submitted to the Degree Progress Department. An approved course plan proposal and letters of recommendation from two USC faculty members must be submitted with the application, with at least one of the recommendations coming from a faculty member in the student's bachelor's degree major department.

Progressive degree program students must fulfill all the requirements for both the bachelor's degree and the master's degree. The total number of units for the master's degree, however, may be reduced by a maximum of one-third. A minimum of two-thirds

of the units required for the master's degree must be at or above the 500 level. Students will be subject to undergraduate academic progress standards while in undergraduate status and master's academic progress standards while in graduate status. The degrees may be awarded separately, but the master's degree will not be awarded before the undergraduate degree. The time limit for completing a progressive degree program is 12 semesters.

In most cases, students will be classified as undergraduate students for the first eight semesters of college enrollment. In the ninth semester, students will be changed to graduate status. While classified as an undergraduate, students will be assessed the undergraduate tuition rate and the enrollment status will be determined by undergraduate standards. While classified as graduate students, students will be assessed the graduate tuition rate appropriate for their master's degree program and the enrollment status will be determined by graduate standards.

Students are immediately classified as graduate students and are ineligible for undergraduate financial aid once the undergraduate degree posts, even if they have completed fewer than eight semesters. Financial aid applicants may wish to postpone the posting of the undergraduate degree until they have exhausted their undergraduate financial aid eligibility.

Students who receive a research assistant or a teaching assistant award before completing eight semesters will be changed to graduate status and will be ineligible to receive undergraduate financial aid. Students must have completed 128 units to be eligible for a research assistant or teaching assistant award. (AP, IB and transfer units may be used in the 128 unit total.)

Detailed information about specific progressive degree programs is listed in the corresponding school section.

Dual Degree Programs

Dual degree programs offer graduate students the opportunity to concurrently complete requirements for two degrees. Students enrolled in dual degree programs must complete all requirements for the dual degree program and then will be awarded both diplomas at the same time. The academic units that offer these programs frequently adjust the requirements for each degree to take into account the correlations between required course work. Students who have completed all the requirements for one of the degree programs and who decide to withdraw from the dual degree program may receive the appropriate single diploma. Students who have withdrawn from the dual degree program to receive the appropriate single diploma and later decide to complete the second degree must apply for admission, be admitted and then fulfill all requirements for the second degree. Detailed information regarding dual degree programs is listed in the appropriate school section. A list of dual degrees is on page xx.

Grade Point Average Requirement

At no time should the overall GPA drop below 3.0. A minimum grade of C (2.0) is required in a course to receive graduate credit. Work graded C- or below is not acceptable for subject or unit credit toward any master's or doctoral program. An overall grade point average of at least 3.0 on all units attempted at USC while

a graduate student is required for graduation, whether or not all such units are applied toward the degree. In some cases, the University Committee on Curriculum has approved different GPA requirements for professional schools. The university will not deviate from policies governing the calculation of the grade point average through inclusion or exclusion of course work.

Unit Requirement

The course of study for the master's degree must include at least 24 units in required and elective courses. In addition, students in a program requiring a thesis must register for four units of 594ab Master's Thesis. The minimum unit requirement for a master's degree is established at the time the program is approved and may not be waived. At least 20 of these units must be completed at USC. The minimum number of units for a doctoral degree is 60, at least 24 of which (exclusive of Doctoral Dissertation 794) must be completed at USC. In addition, at least one-half of the total number of units applied toward a graduate degree must be completed at USC. The minimum number of units for a doctoral degree with Advanced Standing upon entrance is 36. No exceptions are allowed.

A department or school which has a graduate program approved by the university requiring a higher minimum may not waive that requirement. The unit requirement for a dual degree program is established at the time the program is approved by the university and may not be waived.

Regardless of the number of units specified in the university catalogue as required for a graduate degree, at least two-thirds of the units applied toward the degree (including transfer work and not including 594 or 794) must be at the 500 level or higher. Students with Advanced Standing in doctoral programs may not apply additional 400-level course work toward that degree; individual exceptions will not be allowed. Some degree programs, where designated by the faculty and approved by the University Committee on Curriculum, permit a higher maximum number of 400-level units.

Unit credit indicates the number of semester units earned in the course; these units may or may not be applicable to the degree. Degree credit indicates the units are applicable to the degree.

Residence Requirements

A minimum of 20 graduate units at USC is required for the master's degree; 24 units for the doctoral degree.

Residence for a graduate degree program at USC is a period of intensive study completed on the University Park Campus, the Health Sciences Campus and/or at one of the approved off-campus study centers. Each degree-conferring unit may establish a school residence policy. School residence requirements as presented in the *USC Catalogue* are approved by the University Committee on Curriculum and are to be interpreted consistent with university policies on continuous enrollment, leaves of absence, transfer of credit and time limits for completion of graduate degrees. Individual exceptions must be approved by the vice provost for graduate programs.

Pass/No Pass Graded Work

Graduate students may elect to enroll in courses on a pass/no pass basis with department approval. Course

work taken on a pass/no pass basis cannot be applied toward a graduate degree. If a student later requires the course for a degree program (because of a change in degree objective or a decision to obtain an additional degree), the degree-granting unit can decide to allow subject credit for the course and require a substitute course for the unit credit. Individual departments may have placed further restrictions on whether a course taken on a pass/no pass basis can be used to fulfill specific requirements.

All students should consult their academic advisers before enrolling in any course on a pass/no pass basis.

Waiver and Substitution of Course Requirements

Students admitted to graduate degree programs are expected to complete the degree requirements listed in the *USC Catalogue*. A maximum of 25 percent of the stated degree course requirements (exclusive of 594 Master's Thesis and 794 Doctoral Dissertation) may be approved for waiver or substitution by other USC course work, directed research or transfer course work. Substitution of courses with the same prefix are exempted from this limit, as are transfer courses in the same discipline and graduate degree programs with three or fewer specified required courses as part of the entire degree program.

Individual academic programs/departments may approve substitutions and waivers within this limit for their programs. In rare instances, the program or department can request approval of additional substitutions from the dean of the degree program. Waivers or substitutions of over 25 percent should be very rare and will be periodically reviewed by the vice provost for graduate programs.

The very exceptional case of waivers or substitutions over 50 percent must be approved by the vice provost for graduate programs.

Programs establishing a lower maximum substitution limit may waive their own policy by approval of the dean of the academic school. Waiver or substitution of course requirements does not reduce the minimum number of units required for the degree.

Second Master's Degree

A "second master's degree" is any master's degree pursued after a first master's degree is earned at USC. The maximum number of units which may be applied toward the second master's degree for course work taken from a first master's degree at USC is: 4 units toward degree programs requiring 24–32 units; 8 units toward programs requiring 33–40 units; 12 units toward programs requiring 41 or more units. Second master's degrees are not allowed in the same program of study for students who earned their first master's degree at USC.

For students who earned their first master's degree at another institution, no course work may be repeated from the first program of study and no unit credit from the first program of study may be counted toward the second master's degree. Subject credit could be awarded if approved through a petition process to the dean of the degree program. Program exceptions require approval of the University Committee on Curriculum and are listed in the departmental sections of this catalogue. No individual exceptions are allowed.

Enrollment Status

To be considered full time, a master's level student must be enrolled in a minimum of eight units of 400- and 500-level course work, and a doctoral level student must be enrolled in a minimum of six units of 500-level and above course work. All graduate assistants are classified as full-time students during the semester(s) of their appointments as long as they are enrolled for the minimum units required for their assistantship. In order to make normal progress toward the timely completion of course work for a graduate degree, most students will be enrolled for 12 units; 16 units will constitute a maximum load. Students wishing to carry more than 16 units must have prior permission from the degree-conferring unit; such permission will be granted only in exceptional circumstances.

A student who has completed all course work for the master's degree will be considered full time when properly enrolled in either 594 Master's Thesis or GRSC 810 Studies for the Master's Examination.

A student who has completed all course work for the doctoral degree (except dissertation registration) will be considered full time during the semester in which the student is preparing for the doctoral qualifying examination, provided the Request to Take the Qualifying Examination has been submitted and approved for that semester and the student is enrolled in the course GRSC 800 Studies for the Qualifying Examination. Students should not enroll in more than three semesters of GRSC 800. Doctoral students who have been advanced to candidacy, that is, who have completed all course work and have passed the qualifying examination, will be considered full time when properly enrolled in 794 Doctoral Dissertation. In addition to GRSC 800/810 and 594 Master's Thesis and 794 Doctoral Dissertation, there are several other courses and programs as determined by the Dean of Academic Records and Registrar for which enrollment confers full-time status. Students should consult their academic unit for this information.

International students on student visas must be enrolled as full-time students or must receive authorization from the Office of International Services to enroll in fewer than the minimum units. Such students are not eligible to be considered students without formal registration and are in violation of immigration laws when not properly enrolled. Any international student having questions about his or her registration should consult the Office for International Services.

Continuous Enrollment

Students are considered to be pursuing advanced degrees only when they are formally enrolled. Students admitted to a graduate degree objective are required to be enrolled at USC for fall and spring semesters each year until all degree requirements have been satisfactorily completed within the time limit. Enrollment in graduate-level course work is necessary to meet this requirement. Graduate students who fail to register are no longer considered to be enrolled in a graduate degree program. After an unauthorized absence, formal readmission is required. Students who have been granted a leave of absence do not need to apply for readmission following the approved leave. Where appropriate to the design of a given academic program, the faculty of the program may obtain the permission of the University

Committee on Curriculum for a different definition of continuous enrollment.

A master's candidate who is writing a thesis and has completed all course work for the degree must enroll each fall and spring semester in the appropriate thesis registration until the thesis has been approved. A doctoral candidate who has passed the qualifying examination must enroll each fall and spring semester in 794 Doctoral Dissertation until the dissertation has been approved. It is expected that students will enroll in no more than eight semesters of 794 Doctoral Dissertation. Please note that some courses with no academic credit require payment of tuition. Most classes with course numbers ending in z (e.g., 594z and 794z) require payment of 2 units of tuition.

Exceptions to continuous enrollment are subject to policies governing leaves of absence and readmission.

Leave of Absence

Interruptions of enrollment can cause problems in the continuity of course work within a student's graduate program and, therefore, leaves of absence are generally discouraged.

A student in good standing and making satisfactory progress toward a degree who must interrupt studies for compelling reasons (e.g., approved study abroad, sustained ill health) may petition for a leave for a stated period, usually one semester. Students who find it necessary to be excused from registration must request a leave of absence by the last day to drop or add courses. The request should include a plan for academic progress upon return. A leave must be requested before the drop-add deadline and approved by the dean of the degree program, the committee chair and the department chair, if applicable. During the period of leave, a student is not entitled to assistance from the faculty or use of university facilities. If granted, the leave is recorded on the student's transcript and the period of leave is not counted in the time allowed for the completion of degree requirements. Within the degree time limit, a leave of absence may be allowed for one semester at a time, up to a maximum of four semesters. A student who does not return to enrolled status at the end of an approved period of leave is no longer considered to be pursuing an advanced degree. Students who fail to apply for a leave of absence or for whom a leave has been denied (or has expired) are subject to policies governing continuous enrollment and readmission.

Financial aid recipients considering a leave of absence should be aware of the financial aid implications. For more information, refer to the Withdrawal Implications for Recipients of Financial Aid section, page xx.

Readmission

A student who leaves the university without obtaining a formal leave of absence from graduate study is not automatically readmitted. A student wishing to apply for readmission to a graduate degree program must first get the recommendation of the department chair and submit an Application for Readmission to the dean of the degree program. However, if the cumulative GPA is below 3.0, or if readmission is sought after more than two years of an unapproved absence, the Application for Readmission must be sent to the Graduate School for approval. The readmission approval process must be completed by the first day of classes for the term

in which resumption of graduate studies is sought. Approvals are to be based on the academic merits of the student's request. If readmitted, the student will be subject to all of the current University Catalogue requirements for the degree in effect at the time of readmission. Individual exceptions to the *Catalogue* year require the approval of the dean of the degree program. Students seeking readmission after an absence of more than 10 years may be required to re-apply to the university.

A student may not be readmitted into a program of study that has been terminated. The student must either be subject to retroactive enrollment or admission to the new program of study with the corresponding catalogue requirements.

Comprehensive and Qualifying Examinations

In graduate degree programs that require a comprehensive examination and for all doctoral qualifying

examinations, a student who fails the examination may be permitted, at the discretion of the faculty, to take it a second time. For time limits on retaking the comprehensive examinations, consult the individual school's policy. For more information on the Ph.D. qualifying examination, consult the Graduate School section of the *Catalogue*, page xx.

Requests for exception must be approved by the department chair.

A student may not take the comprehensive or qualifying examination more than twice and must be appropriately enrolled at USC during the semester in which any such examination is taken or retaken. A student who fails the comprehensive or qualifying examination a second time may not continue in the degree program after the end of the semester in which the second examination was taken. No exceptions are allowed.

Application for Graduate Degrees

Application for the degree is required for all graduate degrees. Application for the master's degree should be made in the student's academic unit in the semester preceding the one in which the student hopes to graduate and prior to enrolling in 594a. Application for the Ph.D. should be made when the student has passed the qualifying exam and been admitted to candidacy. At least one semester prior to expected graduation, the student must contact his or her academic adviser and have the application submitted online. When the application is received by the Degree Progress office, a STARS report will be issued to the student. The degree cannot be conferred if no application has been submitted.

Theses and Dissertations

See the Theses and Dissertation section in the Graduate School section on page xx.

International Study

Graduate Study Abroad

The Graduate School provides referral to information sources about nationally competitive fellowships, grants, awards, and opportunities for graduate study abroad.

Any non-USC administered overseas study programs or any courses taken abroad by currently enrolled USC students must be reviewed and pre-approved by the Office of Admission and Degree Progress prior to enrollment.

Special Study Options

Center for Excellence in Teaching

Grace Ford Salvatori, Suite 211

(213) 740-9040

FAX: (213) 821-2474

Email: uscet@usc.edu

usc.edu/cet

Director: Edward Finegan, Ph.D.

Program Manager: Dana Coyle

Faculty Fellows: Eyal Ben-Issac, *Clinical Pediatrics*; Edward Finegan, *Linguistics and Law*; Brenda Goodman, *Cinematic Arts*; Thomas Goodnight, *Communication*; Jack Halberstam, *American Studies and Ethnicity*; Gender Studies and Comparative Literature; Tara McPherson, *Cinematic Arts*; Najm Meshkati, *Civil and Environmental Engineering*; Erin Moore, *Anthropology*; Steven Ross, *History*; Sam Safadi, *Aerospace and Mechanical Engineering*; Katherine Sullivan, *Biokinesiology and Physical Therapy*; Rachel Walker, *Linguistics*; Michael Wincor, *Pharmacy*; Theresa Woehle, *Family Medicine*

Distinguished Faculty Fellows: J. Lawford Anderson, *Earth Sciences*; Sarah Banet-Weiser, *Communication*; Warren Bennis, *Management and Organization*; Nelson Eugene (Gene) Bickers, *Physics*; Sharon M. Carnicke, *Theatre*; Steven Chen, *Pharmacy*; Delores Conway, *Information and Operations Management*; Frank Corsetti, *Earth Sciences*; Gerald C. Davison, *Psychology*; William Deverell, *History*; Donna Elliott, *Pediatrics-Keck*; Steven Finkel, *Molecular Biology*; Judy Garner, *Cell and Neurobiology*; Howard Gillman, *Political Science*; Wayne Glass, *International Relations*;

Stephan Haas, *Physics and Astronomy*; Heather James, *English*; Mark E. Kann, *Political Science*; James Kincaid, *English*; Paul W. Knoll, *History*; Steven L. Lamy, *International Relations*; Nancy Lutkehaus, *Anthropology*; Debbie MacInnis, *Business*; Frank Manis, *Psychology*; Win May, *Medical Education*; Doe Mayer, *Cinematic Arts*; William O. McClure, *Biological Sciences*; William F. McComas, *Education*; Charles McKenna, *Chemistry*; Beth Meyerowitz, *Psychology*; Geoffrey Middlebrook, *Writing Program*; Danielle Mihram, *French and Italian*; Sally Pratt, *Slavic Languages and Literatures*; Michael W. Quick, *Biological Sciences*; Nandini Rajagopalan, *Management and Organization*; Alison Dundes Renteln, *Political Science*; Margaret Rosenthal, *French and Italian*; Steven B. Sample, *Honorary Distinguished Faculty Fellow*; Joel E. Schechter, *Cell and Neurobiology*; Terry Lee Seip, *History*; Geoffrey Spedding, *Aerospace and Mechanical Engineering*; Craig B. Stanford, *Anthropology*; Peter Starr, *French and Comparative Literature*; Karen Sternheimer, *Sociology*; Nelly Stromquist, *Education*; Armand R. Tanguay, Jr., *Engineering*; S. Mark Young, *Accounting*; John Walsh, *Gerontology*; Bruce E. Zuckerman, *Religion*

Committed to the development and advancement of learner-centered education, CET's mission is to provide shared vision, support and leadership across the University of Southern California. Dedicated to the advancement of teaching in a learner-centered environment, the center encourages discovery and promulgation of the most effective pedagogies among faculty and students. Its mentoring and other structured programs

School Programs

Many schools and departments offer international study opportunities and internships. Refer to the school sections of the *Catalogue* for specific information.

foster development among junior and senior faculty and doctoral students aspiring to academic careers. Unique among centers with similar purposes at major U.S. colleges and universities, CET's programs are conceived and implemented by faculty fellows, teaching assistant fellows and undergraduate fellows, who together comprise an interdisciplinary community of practice across the curriculum inside and outside the classroom.

CET strives to encourage the full integration of the university's research mission into teaching, both in and outside of the classroom. Excellence in research requires commitment to the development of superior communication and instructional skills in all fields, as well as in the training of our students for their future in academia. The scholarly activities of the faculty may lead directly to opportunities to foster university-wide discourse on the commitment to excellence in teaching.

The objectives of CET's Fellows are to:

- Form, as a group, an interdisciplinary forum for the discussion of common pedagogical approaches and disciplinary differences
- Share teaching strategies, successes and challenges
- Serve as mentors available to faculty and students
- Serve as advocates for a university-wide discourse on the commitment to excellence in teaching
- Foster recognition of the importance of teaching as an indispensable dimension of undergraduate and graduate education

Faculty fellows serve students directly via mentoring and indirectly as evangelists for teaching excellence throughout the university, by sharing ideas in workshops and offering advisement on effective teaching methods to junior faculty. In addition, the fellows collectively

seek to provide an intellectual resource on instructional theory and policy evaluation for university administrators tasked with responding to challenges posed by the changing national educational environment.

The Teaching Assistant Fellows (TAF) program for outstanding USC teaching assistants (TAs) primarily produces teaching assistant (TA) training materials and offers programs to enhance TA instruction across the university and beyond. The TAFs work collaboratively combining their personal teaching expertise with research on best practices to create cutting-edge materials. The TAF-created wiki exemplifies the work of the TAFs. The USC TA wiki provides information by TAs for TAs. The TAF-created wiki can be found at uscta.wikidot.com.

Secondarily, the TAF program provides professional development for the TAFs. TAFs receive advanced training in the modern theory and practice of pedagogy as well as mentoring from CET Fellows and other USC experts.

The CET Undergraduate Fellows program is designed to support CET's mission by establishing a group of undergraduates committed to improving USC's undergraduate educational experience. The CET Undergraduate Fellows program provides students with a way to provide input and support for the betterment of the undergraduate academic experience. Undergraduate fellows also receive mentoring from faculty fellows.

CET trains new teaching assistants at the beginning of each semester and assists in the creation and operation of teaching assistant training programs within each school. The center is also asked to develop better ways to evaluate teaching effectiveness and student learning. In its capacity as principal advocate for and promoter of an excellent teaching and learning environment on

campus, CET provides recognition and awards for excellent teachers and mentors nominated and selected by faculty and students.

Each year CET solicits nominations for and selects the winners of several university-wide awards and grants for teaching excellence: The Associates Award for Excellence in Teaching is the highest honor the university faculty can bestow on its members for outstanding teaching. It recognizes career achievements in teaching with emphasis on concrete accomplishments and proven results; it is not intended as a "teacher of the year" award. A maximum of two awards of \$7,500 each are presented each year at the Academic Honors Convocation in April to emphasize the university's recognition of the significant role that teaching plays in its mission.

The *University Outstanding Teaching Assistant Awards* of \$1,000 are presented each year at the Academic Honors Convocation to three graduate teaching assistants who have exhibited consistent excellence in the classroom and symbolizes the university's dedication to the education of scholar-teachers.

The *Fund for Innovative Undergraduate Teaching* is a program designed to foster new ideas in university instruction. Funding from the Vice Provost's Office of Undergraduate Programs is awarded to innovative projects. Such projects are ones that are not part of the faculty member's usual teaching commitment (either in content or instructional mode), and, as such, make a significant addition to USC's pedagogical effort.

CET also arranges consultations, symposia, institutes, conferences, demonstrations and other kinds of programmatic activities to support excellence in teaching and learning on behalf of the university.

Office of Postdoctoral Affairs
Grace Ford Salvatori Hall (GFS) 315
3601 Watt Way
Los Angeles, CA 90089-1695
Email: postdocs@usc.edu
postdocs.usc.edu

Associate Provost and Director: Mark Todd, Ph.D.

Associate Director: Dan Carino

Associate Director: Donna Garcia

The USC Office of Postdoctoral Affairs is the central resource on campus serving as a liaison between the Office of the Provost, postdoctoral scholars, faculty, and staff to disseminate university initiatives and policies. It works closely with academic units to help recruit a diverse cadre of the best junior scholars to the university and facilitate the training and preparation of postdoctoral scholars for careers as independent researchers, academics and leaders of their chosen fields.

The office also manages the Provost's Postdoctoral Scholars in the Humanities program and works with the USC Postdoctoral Association to assist with creating a connected and trained postdoctoral community through professionalization and social events.

An important role of the Office of Postdoctoral Affairs is to encourage the full integration of postdoctoral scholars at USC and to encourage all postdocs to take advantage of the many opportunities to learn from and connect with other members of the Trojan Family.

More details can be found on the Office of Postdoctoral Affairs Website at postdocs.usc.edu.

Graduate Degree Programs

USC is a major research university providing diverse academic programs. As such it has evolved into a complex organization. The basic underlying principle in its organization is simple: groups of faculty with similar areas of knowledge and interest are grouped together to form departments or schools. The faculty in these units work together in determining the courses to be offered, requirements for degrees, and the content and rationale underlying their curricula.

In practice, the organization becomes more complex. Certain areas of study are based on broad areas of knowledge which need to draw faculty from several departments. The following list of undergraduate and graduate degrees provides a guide to the organization of graduate study at USC. The index includes all degrees offered, and the school which administers the degree.

The basic graduate degrees are the Master of Arts, Master of Science, the Doctor of Philosophy and the professional doctoral degree. At USC there are approximately nine professional doctoral degrees, including law, dentistry and medicine. The Master of Arts degree is normally given for study in the humanities and social sciences. All Master of Arts degrees fall under the jurisdiction of the Graduate School.

At USC, the Master of Science degree is normally given for study in the natural sciences and engineering. Some of the Master of Science degree programs and

several specialized master's degree programs are also under the jurisdiction of the Graduate School.

Other master's degrees are granted by USC for proficiency in professional fields. These professional master's degrees are not generally conferred by the Graduate School.

Each school may provide programs for several types of degree objectives in similar areas of study. For example, the Thornton School of Music provides curricula for the Master of Arts with a major in early music performance and also offers Master of Music degree programs. These many shades of distinction between the types of degrees offered are to provide flexibility to students. Students must select degree objectives based on consideration of what will best prepare them for the career or further study they wish to pursue.

While many schools provide curricula leading to the Doctor of Philosophy degree, all Doctor of Philosophy degrees are conferred by and are under the jurisdiction of the Graduate School. All Ph.D. candidates must meet the standards of scholarship and other regulations established by the Graduate School.

Other doctorates, which prepare students for leadership and expert service in certain fields of science, art and public welfare, are under the jurisdiction of the several schools. Professional doctorates, which are generally not under the jurisdiction of the Graduate School,

include: Doctor of Dental Surgery, Doctor of Education, Juris Doctor, Doctor of Medicine, Doctor of Music, Doctor of Occupational Therapy, Doctor of Planning and Development Studies, Doctor of Pharmacy and Doctor of Physical Therapy.

University Certificates

In addition to the degree programs listed in the index, the university also offers a number of graduate certificate programs. Graduate credit certificate programs must be approved by the University Committee on Curriculum and meet the following requirements: (1) a minimum of 12 units is required; the maximum number of units may vary; (2) for certificate programs of 16 units or fewer, all course work must be at the 500 level or above. For programs of more than 16 units, not more than 25 percent of the total units for the program may be at the 400 level; (3) for completion, a minimum cumulative USC grade point average of 3.0 must be achieved on all course work applied to the certificate; (4) all course work must be earned at USC, except for programs of more than 16 units, in which case not more than 25 percent of the course work may be transfer credit.

Area of Emphasis

An Area of Emphasis is a specific focus within a major that has been formally approved. Areas of Emphasis

are listed within parentheses following the appropriate majors and do not appear on diplomas but are indicated on transcripts.

Dual Degree

A dual degree program joins two distinct graduate degree programs under a single, new program and POST (program of study) code. (Applicants to dual degree programs must apply separately to each degree and be admitted to both programs. After admission to both degree programs, the student is assigned the single, dual degree POST code.) Upon completion of the dual degree program, two degrees (and two diplomas) are awarded. Both degrees in a dual degree program must be awarded with the same conferral date.

Progressive Degree Programs

A progressive degree program enables a USC undergraduate to begin work on a master's degree while completing requirements for the bachelor's degree. The degree may be in the same or different departments but should be in a similar field of study. Students in a progressive degree program must fulfill all requirements for both the bachelor's degree and the master's degree except for the combined total number of units for the degrees. The master's degree may be awarded simultaneously with but not before the bachelor's degree is awarded. See Progressive Degree Programs, page xx, for additional information.

The Graduate Degree Programs List

All degrees are listed alphabetically by the school that provides the program for the degree objective. All degrees are listed alphabetically in the index at the end of this catalogue.

Degree Programs

Program descriptions and degree requirements may be found in the sections of this catalogue under the units listed in boldface type. Unless otherwise noted, each program is under the jurisdiction of the school or division under which that degree is listed. All Ph.D. (Doctor of Philosophy) degrees are under the jurisdiction of the Graduate School. All degrees are listed alphabetically in the index.

School of Architecture

Architecture (M.Arch., Ph.D.*)
Building Science (MBS)
Heritage Conservation (MHC)
Landscape Architecture (M.L.Arch.)

Leventhal School of Accounting

Accounting (M.Acc.)
Business Taxation (MBT)

Division of Biokinesiology and Physical Therapy

Biokinesiology (M.S.*, Ph.D.*)
Biokinesiology and Physical Therapy (Ph.D.*)
Physical Therapy (DPT)

Marshall School of Business

Business Administration (MBA, M.S., Ph.D.*)
Business Research (M.S.)
Business for Veterans (MBV)

Digital Supply Chain Management (MDSCM)
Global Supply Chain Management (M.S.)
Library and Information Science (MMGT, LIS)
Management Studies (MMS)
Medical Management (MMM)

School of Cinematic Arts

Cinematic Arts, (Film and Television Production) (MFA)
Cinematic Arts (M.A.*)
Cinematic Arts (Critical Studies) (Ph.D.*)
Cinematic Arts (Media Arts and Practice) (Ph.D.*)
Animation and Digital Arts (MFA)
Interactive Media (MFA)
Producing for Film, Television, and New Media (MFA)
Writing for Screen and Television (MFA)

Annenberg School for Communication and Journalism

Communication (M.A.*, Ph.D.*)
Communication Management (MCM*)
Global Communication (M.A.*)
Journalism (M.A.*)
Public Diplomacy (MPD)
Public Diplomacy (Practitioner and Mid-Career Professional) (MPDP)
Specialized Journalism (M.A.*)
Specialized Journalism (The Arts) (M.A.*)
Strategic Public Relations (M.A.*)

Ostrow School of Dentistry

Craniofacial Biology (M.S.*, Ph.D.*)
Dental Hygiene (M.S.)
Dental Surgery (DDS)
Geriatric Dentistry (M.S.)
Orofacial Pain and Oral Medicine (M.S.)

School of Dramatic Arts

Applied Theatre Arts (M.A.*)
Theatre (Acting) (MFA)
Theatre (Directing) (MFA)
Theatre (Dramatic Writing) (MFA)
Theatre (Theatrical Design) (MFA)

Rossier School of Education

Advanced Instruction (M.E.)
Education (Ed.D.)
Education Counseling (M.E.)
Global Executive (Ed.D.)
Marriage and Family Therapy (MMFT)
Multiple Subject Teaching (MAT)
Postsecondary Administration and Student Affairs (M.E.)
School Counseling (M.E.)
School Leadership (M.E.)
Single Subject Teaching (MAT)
Single Subject Teaching (Music Education) (MAT)
Teaching English to Speakers of Other Languages (MAT)
Urban Education Policy (Ph.D.*)

Viterbi School of Engineering

Aerospace and Mechanical Engineering
Aerospace and Mechanical Engineering
(Computational Fluid and Solid Mechanics)
(M.S.)

Aerospace and Mechanical Engineering (Dynamics and Control) (M.S.)

Aerospace Engineering (M.S., Engineer, Ph.D.*)
Mechanical Engineering (M.S., Engineer, Ph.D.*)
Mechanical Engineering (Energy Conversion) (M.S.)
Mechanical Engineering (Nuclear Power) (M.S.)

Astronautics and Space Technology

Astronautical Engineering (M.S., Engineer, Ph.D.*)

Biomedical Engineering

Biomedical Engineering (Ph.D.*)
Biomedical Engineering (Medical Imaging and Imaging Informatics) (M.S.)
Medical Device and Diagnostic Engineering (M.S.)
Chemical Engineering (M.S., Engineer, Ph.D.*)

Civil Engineering

Civil Engineering (M.S., Engineer, Ph.D.*)
Civil Engineering (Construction Engineering) (M.S.)
Civil Engineering (Structural Engineering) (M.S.)
Civil Engineering (Transportation Engineering) (M.S.)
Civil Engineering (Transportation Systems) (M.S.)
Civil Engineering (Water and Waste Management) (M.S.)
Construction Management (MCM)
Engineering (Environmental Engineering) (Ph.D.*)
Environmental Engineering (M.S.)

Computer Science

Computer Science (M.S., Ph.D.*)
Computer Science (Computer Networks) (M.S.)
Computer Science (Computer Security) (M.S.)
Computer Science (Data Science) (M.S.)
Computer Science (Game Development) (M.S.)
Computer Science (High Performance Computing and Simulations) (M.S.)
Computer Science (Intelligent Robotics) (M.S.)
Computer Science (Multimedia and Creative Technologies) (M.S.)
Computer Science (Software Engineering) (M.S.)
Computer Science (Technical Professionals) (M.S.)

Electrical Engineering

Computer Engineering (M.S., Ph.D.*)
Electrical Engineering (M.S., Engineer, Ph.D.*)
Electrical Engineering (Computer Networks) (M.S.)
Electrical Engineering (Electric Power) (M.S.)
Electrical Engineering (Multimedia and Creative Technologies) (M.S.)
Electrical Engineering (Telecommunications) (M.S.)
Electrical Engineering (VLSI Design) (M.S.)
Financial Engineering (M.S.)
Systems Architecting and Engineering (M.S.)
Wireless Health Technologies (M.S.)

Green Technologies

Green Technologies (M.S.)

Industrial and Systems Engineering

Engineering Management (M.S.)
Health Systems Management Engineering (M.S.)
Industrial and Systems Engineering (M.S., Engineer, Ph.D.*)
Manufacturing Engineering (M.S.)
Operations Research Engineering (M.S.)
Product Development Engineering (M.S.)

Informatics

Cyber Security (MCBS)

Materials Science

Materials Engineering (M.S.)
Materials Science (M.S., Engineer, Ph.D.*)

Petroleum Engineering

- Petroleum Engineering (M.S., Engineer, Ph.D.*)
- Petroleum Engineering (Geoscience Technologies) (M.S.)
- Petroleum Engineering (Smart Oilfield Technologies) (M.S.)

Roski School of Fine Arts

- Fine Arts (MFA*)
- Art and Curatorial Practices in the Public Sphere (M.A.*)

Davis School of Gerontology

- Aging Services Management (MASM)
- Gerontology (M.A.*, M.S., Ph.D.*)
- Long Term Care Administration (MLTCA)

Graduate School

- Neuroscience (M.S.*, Ph.D.*)

Gould School of Law

- Comparative Law (MCL)
- Law (J.D.)
- Laws (LL.M)

Dornsife College of Letters, Arts and Sciences*

All graduate programs in the Dornsife College are under the jurisdiction of the Graduate School.

- American Studies and Ethnicity (Ph.D.)
- Anthropology (M.A., Ph.D.)
 - Visual Anthropology (MVA)
- Art History (M.A., Ph.D.)
- Biological Sciences
 - Biology (M.S.)
 - Biology (Neurobiology) (Ph.D.)
 - Computational Biology and Bioinformatics (Ph.D.)
 - Integrative and Evolutionary Biology (Ph.D.)
 - Marine and Environmental Biology (M.S.)
 - Marine Biology and Biological Oceanography (Ph.D.)
 - Molecular and Computational Biology (M.S.)
 - Molecular Biology (Ph.D.)
 - Molecular Genetics and Biochemistry (M.S.)

Chemistry

- Chemistry (M.A., M.S., Ph.D.)
- Chemistry (Chemical Physics) (Ph.D.)

Classics (M.A., Ph.D.)

- Comparative Studies in Literature and Culture
 - Comparative Studies in Literature and Culture (Comparative Media and Culture) (M.A., Ph.D.)
 - Comparative Studies in Literature and Culture (Comparative Literature) (M.A., Ph.D.)
 - Comparative Studies in Literature and Culture (French and Francophone Studies) (M.A., Ph.D.)
 - Comparative Studies in Literature and Culture (Slavic Languages and Literature) (M.A., Ph.D.)
 - Comparative Studies in Literature and Culture (Spanish and Latin American Studies) (M.A., Ph.D.)

Earth Sciences

- Geological Sciences (M.S., Ph.D.)

East Asian Area Studies (M.A.)

- East Asian Languages and Cultures (M.A., Ph.D.)

Economics

- Economic Developmental Programming (M.A.)
- Economics (M.A., Ph.D.)

English

- English (M.A., Ph.D.)
- Literature and Creative Writing (Ph.D.)
- Environmental Studies
 - Environmental Studies (M.A.)
 - Environmental Risk Analysis (M.S.)
- Geographic Information Science and Technology (M.S.)
- History (M.A., Ph.D.)
- International Relations (M.A.)
- Kinesiology (Ph.D.)
- Liberal Studies (MLS)
- Linguistics
 - Linguistics (M.A., Ph.D.)
 - Linguistics (East Asian Linguistics) (Ph.D.)
 - Linguistics (Hispanic Linguistics) (M.A., Ph.D.)

Mathematics

- Applied Mathematics (M.A., M.S., Ph.D.)
- Computational Molecular Biology (M.S.)
- Mathematical Finance (M.S.)
- Mathematics (M.A., Ph.D.)
- Statistics (M.S.)

Ocean Sciences (M.S., Ph.D.)**Philosophy**

- Philosophy (M.A., Ph.D.)
- Philosophy and Law (M.A.)
- Physics and Astronomy
 - Physics (M.A., M.S., Ph.D.)
 - Physics for Business Applications (M.S.)
- Political Science and International Relations (M.A., Ph.D.)
- Professional Writing (MPW)
- Psychology
 - Human Behavior (M.S.)
 - Psychology (M.A., Ph.D.)
 - Psychological Science (M.A.)
- Public Diplomacy (MPD)
- Religion and Social Ethics (M.A., Ph.D.)
- Sociology (M.A., Ph.D.)

Keck School of Medicine

- Medicine (M.D.)
- Academic Medicine (MAM)
- Anesthesia
 - Nurse Anesthesia (M.S.*)
- Biochemistry and Molecular Biology
 - Biochemistry and Molecular Biology (M.S.*, Ph.D.*)
 - Molecular Epidemiology (M.S.*, Ph.D.**)
- Cell and Neurobiology (M.S.*, Ph.D.*)
- Family Medicine
 - Physician Assistant Practice (MPAP)
- Genetic, Molecular and Cellular Biology (Ph.D.*)
- Global Medicine (M.S.)
- Molecular Microbiology and Immunology (M.S.*, Ph.D.*)
- Pathology
 - Experimental and Molecular Pathology (M.S.*)
 - Physiology and Biophysics (M.S.*, Ph.D.*)
- Preventive Medicine
 - Applied Biostatistics and Epidemiology (M.S.*)
 - Biostatistics (M.S.*, Ph.D.*)
 - Clinical, Biomedical and Translational Investigations (M.S.*)
 - Epidemiology (Ph.D.*)
 - Molecular Epidemiology (M.S.*, Ph.D.*)
 - Preventive Medicine (Health Behavior Research) (Ph.D.*)

Public Health (MPH)

- Systems Biology and Disease (Ph.D*)

Thornton School of Music

- Choral Music (M.M., DMA)
- Composition (M.M., DMA)
- Conducting (M.M.)
- Early Music Performance (DMA)
- Jazz Studies (M.M., DMA)
- Music (Early Music Performance) (M.A.*)
- Music (Historical Musicology) (Ph.D.*)
- Music (History and Literature) (M.A.*)
- Music Education (M.M., DMA)
- Performance (Bassoon) (M.M., DMA)
- Performance (Clarinet) (M.M., DMA)
- Performance (Classical Guitar) (M.M., DMA)
- Performance (Double Bass) (M.M., DMA)
- Performance (Flute) (M.M., DMA)
- Performance (French Horn) (M.M., DMA)
- Performance (Harp) (M.M., DMA)
- Performance (Keyboard Collaborative Arts) (M.M., DMA)
- Performance (Oboe) (M.M., DMA)
- Performance (Organ) (M.M., DMA)
- Performance (Percussion) (M.M., DMA)
- Performance (Piano) (M.M., DMA)
- Performance (Saxophone) (M.M., DMA)
- Performance (Studio Guitar) (M.M., DMA)
- Performance (Trombone) (M.M., DMA)
- Performance (Trumpet) (M.M., DMA)
- Performance (Tuba) (M.M., DMA)
- Performance (Viola) (M.M., DMA)
- Performance (Violin) (M.M., DMA)
- Performance (Violoncello) (M.M., DMA)
- Performance (Vocal Arts) (M.M., DMA)
- Sacred Music (M.M., DMA)

School of Pharmacy

- Clinical and Experimental Therapeutics (Ph.D.*)
- Health Care Decision Analysis (M.S.)
- Health Economics (Ph.D.*)
- Management of Drug Development (M.S.)
- Molecular Pharmacology and Toxicology (M.S.*, Ph.D.*)
- Pharmaceutical Economics and Policy (M.S.*)
- Pharmaceutical Sciences (M.S.*, Ph.D.*)
- Pharmacy (Pharm.D.)
- Regulatory Science (M.S.*, D.R.Sc.)

Division of Occupational Science and Occupational Therapy

- Occupational Science (Ph.D.*)
- Occupational Therapy (M.A.*, OTD*)

Price School of Public Policy

- Construction Management (MCM)
- Health Administration (MHA)
- Executive Master of Health Administration (MHA)
- Executive Master of Leadership (M.L.)
- Planning (MPL, Ph.D.*)
- Planning and Development Studies (MPDS)
- Policy, Planning and Development (DPPD)
- Public Administration (MPA)
- Public Policy (MPP)
- Public Policy and Management (Ph.D., MPPM.)
- Real Estate Development (MRED)
- Urban Planning and Development (Ph.D.)

School of Social Work

Social Work (MSW, Ph.D.*)

under the jurisdiction of the Graduate School**jointly administered by more than one school or unit***Dual Degree Programs**

Doctor of Medicine/Master of Public Health (M.D./MPH)

Doctor of Pharmacy/Master of Public Health (Pharm.D./MPH)

Doctor of Pharmacy/Master of Science, Gerontology (Pharm.D./M.S.)

Doctor of Pharmacy/Master of Science, Global Medicine (Pharm.D./M.S.)

Doctor of Pharmacy/Master of Science, Regulatory Science (Pharm.D./M.S.)

Doctor of Pharmacy/Doctor of Philosophy, Pharmaceutical Sciences and Toxicology (Pharm.D./Ph.D.)

Doctor of Philosophy, Psychology (Clinical)/Master of Public Health (Health Promotion) (Ph.D./MPH)

Doctor of Physical Therapy/Master of Public Health (DPT/MPH)

Master of Architecture/Master of Planning (M.Arch./MPL)

Master of Business Administration/Doctor of Education (MBA/Ed.D.)

Master of Business Administration/Master of Arts, East Asian Area Studies (MBA/M.A.)

Master of Business Administration/Master of Arts, Jewish Nonprofit Management (MBA/M.A.)

Master of Business Administration/Master of Science, Industrial and Systems Engineering (MBA/M.S.)

Master of Business Administration/Doctor of Medicine (MBA/M.D.)

Master of Business Administration/Doctor of Pharmacy (MBA/Pharm.D.)

Master of Business Administration/Master of Planning (MBA/MPL)

Master of Business Administration/Master of Real Estate Development (MBA/MRED)

Master of Business Administration/Master of Social Work (MBA/MSW)

Master of Communication Management/Master of Arts, Jewish Nonprofit Management (MCM/M.A.)

Master of Arts, Global Communication/Master of Science, Global Media and Communications (M.A./M.Sc.)

Master of Science, Gerontology/Master of Business Administration (M.S./MBA)

Master of Science, Gerontology/Master of Health Administration (M.S./MHA)

Master of Science, Gerontology/Master of Planning (M.S./MPL)

Master of Science, Gerontology/Master of Public Administration (M.S./MPA)

Master of Science, Gerontology/Master of Social Work (M.S./MSW)

Master of Landscape Architecture/Master of Planning (M.L.Arch./MPL)

Juris Doctor/Master of Business Administration (J.D./MBA)

Juris Doctor/Master of Business Taxation (J.D./MBT)

Juris Doctor/Master of Communication Management (J.D./MCM)

Juris Doctor/Master of Arts, Economics (J.D./M.A.)

Juris Doctor/Master of Science, Gerontology (J.D./M.S.)

Juris Doctor/Master of Arts, International Relations (J.D./M.A.)

Juris Doctor/Master of Arts, Philosophy (J.D./M.A.)

Juris Doctor/Doctor of Pharmacy (J.D./Pharm.D.)

Juris Doctor/Doctor of Philosophy in Political Science and International Relations (J.D./Ph.D.)

Juris Doctor/Master of Public Administration (J.D./MPA)

Juris Doctor/Master of Public Policy (J.D./MPP)

Juris Doctor/Master of Real Estate Development (J.D./MRED)

Juris Doctor/Master of Arts, Religion and Social Ethics (J.D./M.A.)

Juris Doctor/Master of Social Work (J.D./MSW)

Master of Planning/Master of Arts, Economics (MPL/M.A.)

Master of Planning/Master of Public Administration (MPL/MPA)

Master of Planning/Master of Public Health (MPL/MPH)

Master of Planning/Master of Real Estate Development (MPL/MRED)

Master of Planning/Master of Social Work (MPL/MSW)

Master of Public Administration/Master of Arts, Jewish Nonprofit Management (MPA/M.A.)

Master of Public Administration/Master of Social Work (MPA/MSW)

Master of Arts, Art and Curatorial Practices in the Public Sphere/Master of Planning (M.A./MPL)

Master of Public Policy/Master of Planning (MPP/MPL)

Master of Social Work/Doctor of Philosophy, Social Work (MSW/Ph.D.)

Master of Social Work/Master of Arts, Jewish Nonprofit Management (MSW/M.A.)

Master of Social Work/Master of Public Health (MSW/MPA)

University Graduate Certificates**School of Architecture**

Architecture

Building Science

Heritage Conservation

Landscape Architecture

Marshall School of Business

Business Administration

Business Fundamentals for Non-Business Professionals

Financial Analysis and Valuation

Information Systems and Supply Chain Management

Management Studies

Optimization and Supply Chain Management

Supply Chain Strategy

Technology Commercialization

School of Cinematic Arts

Business of Entertainment

Digital Media and Culture

Writing for Screen and Television

Annenberg School for Communication and Journalism

Entertainment Communication Management

Health Communication Management

International and Global Communication Management

Marketing Communication Management

New Communication Technologies

Strategic Corporate and Organizational Communication Management

Ostrow School of Dentistry

Advanced Endodontics

Advanced Operative Dentistry

Advanced Oral and Maxillofacial Surgery

Advanced Orthodontics

Advanced Pediatric Dentistry

Advanced Periodontology

Advanced Programs in Dental Education

Advanced Prosthodontics

Craniofacial Biology

Oral Medicine

Orofacial Pain

Rossier School of Education

Gifted Education

School Counseling

Special Education

STEM Education Elementary

STEM Education Secondary

Viterbi School of Engineering

Astronautics and Space Technology

Astronautical Engineering

Civil Engineering

Transportation Systems

Biomedical Engineering

Health, Technology and Engineering

Computer Science

Software Architecture

Electrical Engineering

Systems Architecting and Engineering

Industrial and Systems Engineering

Engineering Technology Commercialization

Health Systems Operations

System Safety and Security

Petroleum Engineering

Smart Oilfield Technologies

Systems Architecting and Engineering

Network Centric Systems

Systems Architecting and Engineering

Davis School of Gerontology

Gerontology

Graduate School

Diploma in Innovation

Division of Independent Health Professions

Biokinesiology and Physical Therapy

Neurologic Physical Therapy

Orthopedic Physical Therapy

Occupational Science and Occupational Therapy

Occupational Therapy

Gould School of Law

Business Law

Entertainment Law

Dornsife College of Letters, Arts and Sciences

Anthropology

Visual Anthropology

Art History

History of Collecting and Display

Visual Studies

East Asian Studies

Energy, Technology and Society

Foreign Language Teaching

Gender Studies

Geographic Information Science and Technology

Keck School of Medicine

Cell and Neurobiology and Preventive Medicine

Clinical, Biomedical and Translational Investigations

Global Medicine

Health, Technology and Engineering

Thornton School of Music

Arts Leadership

Performance

Scoring for Motion Pictures and Television

Artist Diploma

School of Pharmacy

Clinical Research Design and Management

Food Safety

Patient and Product Safety

Preclinical Drug Development

Regulatory and Clinical Affairs

Price School of Public Policy

Administration of Programs in Long Term Care

Executive Administration of Mental Health Programs

Homeland Security and Public Policy

Management of Ambulatory Care Systems

Nonprofit Management and Policy

Political Management

Public Financial Management

Public Management

Public Policy

Real Estate Development

Sustainable Cities (offered with Architecture and Engineering)

Transportation Systems

USC Graduate School

The USC Graduate School is responsible for those academic and professional affairs of the university that relate to the degree programs offered through the Graduate School. The Graduate School also participates in general university affairs relating to graduate and professional education and research.

Administration

Sarah Pratt, Ph.D., *Vice Provost for Graduate Programs*
Richard Andalon, Ph.D., *Associate Dean and Director*
Meredith Drake-Reitan, Ph.D., *Assistant Dean*
Shayna Kessel, Ph.D., *Assistant Dean*
Laura Yoneda, *Associate Dean*

History

Graduate studies had their formal beginnings at the University of Southern California in 1910, and 1923 marked the official constitution of the Graduate School of the university.

Mission

The Graduate School values the contribution of every graduate student. Its mission is to promote a distinguished Ph.D. educational experience, to support and celebrate all graduate student achievements and to provide leadership in the establishment and communication of policies, standards and processes related to graduate education. Through its Provost's and Annenberg Graduate Fellowship program, the Graduate School partners excellent students with excellent faculty across the spectrum of disciplines and awards fellowships to incoming students who show outstanding promise for academic careers in research and teaching, and who serve to increase the representation of underrepresented groups in their disciplines.

The vice provost for graduate programs has academic oversight responsibility for all graduate programs at the university. Excellence in graduate and professional education is critically dependent on the exchange of scholarly ideas among an increasingly diverse community of faculty and students. The values that characterize these interactions include dedication to excellence, mutual respect, fairness, collegiality, honesty and integrity.

The Graduate School, which confers all the university's Ph.D. degrees, several professional doctorates and many master's degrees, adheres to that vision and those values. Graduate students at USC are key members of the university's community of scholars, contributing diverse viewpoints and fresh insights that are poised to make their mark on the theories, systems, innovations, public policy and creative work of the 21st century.

Common threads in all Graduate School activities are: promoting academic excellence; advocating on behalf of graduate students; and the fostering of the sense of community (composed of students, faculty,

staff, alumni and administrators) that characterizes graduate education at USC as a place for students of all backgrounds. Facilitating the participation of underrepresented groups in all areas of research and graduate studies is critical to the mission.

Graduate School Policies and Requirements

Admission

Admission to degree or certificate programs in the Graduate School is processed through the USC Office of Graduate Admission, which receives and processes all applications, evaluates credentials and issues notification letters. Only a letter from the office of Graduate Admission grants official admission to a graduate degree objective in the university. The Graduate School establishes and monitors the standards under which students are admitted for study in degree programs under its jurisdiction. The following are the basic requirements: (1) a bachelor's degree or its equivalent from a regionally accredited college or university, comparable in standard to that awarded at USC; (2) satisfactory scores on the Graduate Record Examinations (GRE); (3) for international applicants, a valid score on the Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS); (4) intellectual promise, including evaluation of grade point averages (GPA) that indicates an ability to do acceptable graduate work; (5) and strong personal qualifications, including good moral character. Credentials for admission must include a complete record of all previous college or university work. Admission to the university, under the standards of the Graduate School, is determined by the appropriate academic department.

It must be stressed that while every student must be qualified for admission to the Graduate School, the fact of qualification does not guarantee admission.

Admission documents are reviewed by the applicant's prospective department. Applicants are advised that individual departments may establish additional admission standards, such as requiring the submission of the appropriate GRE Subject Test or the submission of academic letters of recommendation directly to the department at USC. The applicant should contact the department of interest for information on additional required supplementary documents. See the departmental sections of this catalogue or visit the departmental Website.

Graduate Record Examinations

As a supplement to other evidence of an applicant's preparation for successful graduate study, the General Test of the Graduate Record Examinations (GRE) is an integral part of the admission procedure. Individual departments may also require the appropriate Subject Test.

The analytical portion of the GRE now requires a writing sample. The results are conveyed to any institution requesting an applicant's test results. Applicants should take the package of General Interest measures containing the Mathematical Reasoning or Quantitative Reasoning Test as appropriate for their intended program.

Test scores on the GRE that are more than five years old at the time of application are not accepted. Students are advised to repeat the GRE if they have not taken the test within five years.

Test of English as a Foreign Language and International English Language Testing System

The ability to communicate effectively in English — to read, write and speak the language fluently — is vital to the success of all USC students. Therefore, graduate applicants at all levels are expected to demonstrate their English proficiency as part of the application process. All international graduate applicants are required to submit scores from either the TOEFL (Test of English as a Foreign Language) or IELTS (International English Language Testing System). There are no minimum TOEFL or IELTS scores required for admission. Official scores must be received from the testing service, dated no earlier than two years (24 months) prior to the start of the student's first term at USC.

Deadlines and Notification

The completed application for admission and all required supporting documents should be submitted to the Office of Graduate Admission based on the published deadline for the program of interest. In the case of a student enrolled in the last semester of the baccalaureate program, all credentials, including evidence of work in progress, should be submitted.

Some departments only admit graduate students to begin study in the fall semester. Departmental deadlines are listed on the departmental Websites. Priority consideration for Ph.D. student funding will be given to those applicants who submit all application materials by December 1. The university will continue to accept and consider applications submitted after December 1.

Only a letter from the Office of Graduate Admission grants official admission to a degree objective in the university. Correspondence with department chairpersons or individual faculty members does not constitute admission.

Acceptance with a Degree Objective

Students will be admitted with a specified degree objective. Admission to a degree objective and permission to enroll does not imply that the student is or will be automatically guaranteed the right to continue in a degree program or to be a candidate for an advanced degree.

Classification of Admission Status

Full Graduate Standing

Students who have been accepted for admission, have met all the basic admission requirements and filed all relevant documents with the Office of Graduate Admission are considered admitted to full graduate standing. Occasionally, applicants for admission may lack one of the qualifications listed above or may have difficulty producing appropriate documentation; such students may be conditionally admitted.

Conditional Admission

Conditional admission is a status for those students who have not yet met all requirements for admission to full graduate status or who have not filed all relevant documents with the office of graduate admission. See page xx in the Graduate and Professional Education section for policies governing enrollment as a conditionally admitted student. Full graduate student standing is not granted until all conditions have been met within the time limit given.

Limited Status Students

Some students may wish to enroll in graduate-level courses for personal satisfaction or professional enhancement without currently seeking a graduate degree. Students may be permitted to enroll with permission from the department. Such students should obtain a special Limited Status form from the Office of Academic Records and Registrar at the time of registration. This will permit them to register in the classification limited status. See page xx in the Academic Policies section for policies governing limited status enrollment. Limited status enrollment is not to be construed as admission.

Doctoral Admission with Advanced Standing

Students can be admitted with Advanced Standing (entry with an appropriate completed graduate degree from an accredited institution) to all programs in which the Ph.D. degree is conferred by the Graduate School at USC with approval from the vice provost for graduate programs. See page xx in the Graduate and Professional Education section under "Transfer of Course Work" for more information.

Advancement to Candidacy

Admission to graduate study does not imply advancement to candidacy for an advanced degree and gives no right or claim to be so admitted. Candidacy is determined after the student has demonstrated the ability to do graduate work with originality, excellence and independence at USC.

General Requirements for Graduate Degrees

The foundation for the master's degree or for the Ph.D. degree is a baccalaureate degree or its equivalent comparable in standard to that awarded at USC from a regionally accredited college or university. Many doctoral students, of course, will already have received a master's degree.

University policies governing unit, grade point average and time limit requirements are stated in the Academic Policies section of this catalogue (see page xx). Graduate students should also consult this section for policies on transfer of credit, concurrent enrollment, continuous enrollment, leaves of absence, readmission, and waiver and substitution of course requirements.

Unit Requirements

The course of study for the master's degree must include at least 24 units in required and elective courses. In addition, students in a program requiring a thesis must register for four units of 594ab Master's Thesis.

A minimum of 60 units of course work beyond the baccalaureate is required for the Ph.D. degree, including research courses and four units of 794ab Doctoral Dissertation. No more than 8 units of 794 may be received or applied toward the degree.

A minimum of 36 units of course work beyond the first graduate degree, exclusive of 794 Doctoral Dissertation, is required for doctoral degree students admitted with Advanced Standing. Additional course work may be required if deemed necessary by the student's faculty.

Residence

Residence is a period of intensive study completed at USC. For the master's degree a minimum of 20 units of course work applicable toward the degree must be completed on the University Park and/or Health Sciences Campuses and/or at one of the university's approved off-campus study centers.

For the Ph.D. degree a minimum of 24 units applicable toward the degree, exclusive of 794 Doctoral Dissertation, must be completed on the University Park and/or Health Sciences Campuses. Internships, fieldwork and other off-campus experiences do not count toward residence.

It is not intended that the Ph.D. degree be conferred as a certificate of residence, however faithful or extended, or as a certificate of the satisfaction of unit requirements, which are to be regarded as largely preliminary. It has been found that the scholastic requirements for the degree cannot be completed in less than the equivalent of three full years of work devoted wholly to graduate study and research with appropriate facilities and under university supervision.

Communication Skills Requirement

All candidates for advanced degrees awarded by the Graduate School must demonstrate the ability to communicate and transfer knowledge. The specific method(s) for satisfying this requirement will be established by each individual academic unit.

Exception to Graduate School Policy

Exceptions to certain policies and procedures governing Graduate School degree programs will be considered upon the submission of a specific request supported by

adequate reasons, information and documentation, if needed. The signatures and recommendation of the faculty adviser or committee chair, the department chair, and, in some cases, the dean of the degree program, are required. Requests must be initiated and submitted on behalf of the student by the department's or program's staff adviser. After training on the Graduate School's online request system, advisers may access the necessary forms through the Graduate School's Website.

General Requirements for Progressive Degree Programs

A progressive degree program enables a USC undergraduate to begin work on a master's degree while completing requirements for the bachelor's degree. The degree may be in the same or different departments but should be in a similar field of study. See page xx in the Graduate and Professional Education section for detailed information.

Departmental Requirements

The requirements and regulations set forth in this portion of the catalogue are to be construed only as minimal requirements established by the Graduate School. In addition, the student is obligated to meet all the requirements established by the individual department as described in the departmental sections.

Advisement and Program of Study

Academic advisement of entering graduate students will be provided by a designated faculty member in the student's home department. Ideally, during the first semester of graduate enrollment a formal program of study should be developed and agreed upon in writing. This academic plan should include: (1) the sequence of required and elective courses, with a diversity of faculty instruction and a reasonable balance between course work and directed research appropriate for the degree; (2) evaluation of available transfer credit for application toward the degree; and (3) the schedule and procedures for departmental evaluation of the student. The program of study should be on file in the student's department and may be modified in keeping with the student's progress toward the degree objective. This should become the responsibility of the student's qualifying exam committee when it has been established.

Foreign Language/Research Tool Requirements

Although the Graduate School does not require a foreign language examination, some departments do have specific language requirements for their graduate programs.

The foreign language requirement is determined by the individual departments or schools, subject to approval by the University Committee on Curriculum. For the Ph.D. student, these requirements should be met well in advance of the qualifying examination.

When proficiency in a foreign language or a research tool is required, the evidence attesting to proficiency may not be more than five years old. This regulation applies regardless of the form of the evidence.

For specific information, see Foreign Language/Research Tool Requirement under the appropriate department and program sections of this catalogue.

Academic Warning and Dismissal

Faculty advisers and departments take factors other than satisfactory grades and adequate GPAs into consideration in determining a student's qualifications for an advanced degree. A student's overall academic performance, specific skills and aptitudes, and faculty evaluations will be considered in departmental decisions regarding a student's continuation in a master's or doctoral degree program.

Satisfactory progress toward an advanced degree as determined by the faculty is required at all times. Students who fail to make satisfactory progress will be so informed by their department or committee chair or school dean. The faculty has the right to recommend at any time after written warning that a student be dismissed from a graduate program for academic reasons or that a student be denied readmission.

Theses and Dissertations

Submission of Theses and Dissertations

Required documentation is electronically submitted to the Graduate School by the deadline date and time. It is then reviewed by the thesis coordinator. When the documentation is determined to be complete, the candidate is cleared to electronically submit the dissertation manuscript.

Required documentation for doctoral students includes the Approval to Submit Defended and Final Copy of Doctoral Work form and, for Ph.D. students only, the electronic receipt confirming completion of the Survey of Earned Doctorates; the Signature Page is optional. For master's students, the Approval to Submit Final Copy of Master's Thesis is required, and the Signature Page is optional. All of these documents are submitted as PDFs.

Manuscripts are reviewed and required documentation is processed in the order received. Students have three months from the date the committee chair signs the Approval to Submit form to complete the necessary corrections to the formatting of the manuscript.

Early Submission Option: Students who submit the necessary documentation a week or more before the add/drop deadline and who also upload the manuscript to the Graduate School by the add/drop deadline in a given term are exempted from the requirement to register in 594 or 794 in that semester. Otherwise, students register for 594, 794 or the equivalent in order to maintain continuous enrollment. International students considering the Early Submission Option should check with the Office of International Services to be sure the lack of course registration will not affect their visa status.

Acceptance by the University

The university must accept all theses and dissertations in an approved, final and electronic form before the degree can be conferred. The student's committee must have approved all documents before submission to the Graduate School. The student remains in contact with the Graduate School during the corrections process.

At the time of submission, all manuscripts should be formatted and edited according to the style determined by the student's department or program. The thesis coordinator does not function as a proofreader or copy editor.

If the formatting of the manuscript requires corrections, the student makes the corrections and uploads a new PDF of the manuscript in the time allotted by the

thesis coordinator. A manuscript that has been electronically submitted for further review is also processed in the order in which it is received.

After a manuscript has been approved by the thesis coordinator, the student uploads an identical copy of the final PDF of the manuscript to the USC Libraries.

Schedule of Deadlines

The Graduate School provides a schedule of specific dates for completing the thesis or dissertation submission for the student to qualify for graduation in the corresponding semester. These dates are published on the Graduate School's Website. Regardless of the date of submission, students must submit complete documentation and finish all corrections to the manuscript before the degree can be conferred. Upon completion of all requirements, the official USC transcript will serve as evidence of the degree until the diploma is received.

Publication

All theses and dissertations will be made available via ProQuest and the USC Libraries.

Thesis/Dissertation Fees

The doctoral candidate's fee of \$115 covers ProQuest, USC Libraries and Graduate School processing fees. The master's candidate's fee of \$105 covers ProQuest, USC Libraries and Graduate School processing fees. The fees are assessed by the thesis coordinator after the required documentation has been submitted, and the charges appear on the student's account.

General Requirements for the Master's Degree Course Requirements

The Graduate School confers the master's degree upon the satisfactory completion of a carefully planned curriculum. A comprehensive examination or summative experience may replace a thesis in certain departments. A student must enroll in GRSC 810 during the semester in which the comprehensive examination is to be taken if not otherwise enrolled. Consult the appropriate departmental section of this catalogue for specific course requirements.

For those master's degrees not conferred by the Graduate School, the degree-conferring school determines if a thesis, comprehensive exam or other summative experience is required.

When the summative experience is not a thesis or comprehensive examination, the nature of the summative experience needs to be explicitly defined including the method by which the student's performance will be assessed and how the results of that assessment will be recorded. The summative experience requirement will often be satisfied by passing a course designed specifically for this purpose.

See Transfer of Course Work, page xx, for the maximum number of units of transferred course work that may be applied toward a master's degree. Except in formally designated dual degree programs, this same policy regulates the number of credits that may be applied toward a master's degree from an advanced degree previously completed at USC.

Master's Committee

The student's program of study and thesis and/or comprehensive examination are under the direction of a

master's committee composed of three faculty members who must be tenure-track and/or associate or full research professors. At least two of the members, including the thesis chairperson, must be from the student's home department and first be approved by the chair of the student's home department. All members must then be approved by the dean of the degree program. Those departments which allow a comprehensive examination in lieu of thesis and administer that comprehensive examination on a departmental, rather than an individual basis, may substitute a single adviser for the three-person master's committee.

Application for the Master's Degree

At least one semester preceding the one in which the student expects to receive the degree and prior to registration in 594a Master's Thesis, the student should ask the academic department to request an online degree check from Degree Progress. Application is made online by the academic department and then transmitted to the Degree Progress Department following approval of the program of studies by the student's home department. Degree Progress will prepare a Degree Audit Report (STARS Report) reflecting course work and requirements completed and those remaining to be met. A copy of the Credit Summary is sent to the student and the home department.

Master's Examinations

A student who fails the master's examination may be permitted, at the discretion of the faculty, to take it a second time. The retaking of a failed master's examination must be completed before the end of the second consecutive semester (excluding summer session) following the first examination. Requests for exception must be approved by the department chair. A student may not take the master's examination more than twice and must be appropriately enrolled at USC during the semester in which such an examination is taken or retaken. A student who fails the master's examination a second time may not continue in the degree program after the end of the semester in which the second examination was taken. No exceptions are allowed.

Master's Thesis

The thesis is supervised throughout its preparation by the student's qualifying exam committee. It is desirable for the student to have a conference with each committee member promptly following the approval of the topic. Thereafter, thesis work is normally under the immediate supervision of the committee chair: *Final acceptance is based upon the unanimous recommendation of all members of the committee.*

A student who is required to write a thesis must submit a satisfactory outline and comprehensive bibliography for the proposed thesis and demonstrate a mastery of the subject satisfactory to the qualifying exam committee. The student's thesis or qualifying exam committee is responsible for the content and bibliographical consistency of the thesis.

During the five-year time limit allowed for completion of the degree and following the completion of all course work, the student must enroll in 594 Master's Thesis for two semesters and for each semester thereafter, excluding summer, until the thesis has been approved and the approval of the master's thesis form has

been signed by the student's qualifying exam committee. Registration for the thesis in two semesters, excluding summer, is the minimum requirement entitling the student to thesis supervision by the qualifying exam committee. No more than four units of credit in 594 may be received regardless of the number of semesters the student may be required to be enrolled. Students may enroll in 594 during one summer session but may not register for more than two units of 594 during a given semester; individual exceptions require the approval of the dean of the degree program.

Students who find it necessary to be excused from registration in 594 for a semester must request a leave of absence by petition to the dean of the degree program prior to the beginning of the semester. See Leave of Absence on page xx. Approval of the committee chair, department chair and dean of the degree program are required. During a leave of absence students will not be entitled to assistance from the qualifying exam committee or to the use of university facilities. Considerations for approving a leave of absence include the student's progress to date in meeting the time schedules for the completion of degree requirements.

Master's Thesis Submission

Please refer to the Theses and Dissertations section on page xx for information on the submission process.

General Requirements for the Doctor of Philosophy Degree

Qualified students will be received as applicants for candidacy for the Doctor of Philosophy degree with a major in departments which are adequately equipped with staff, library and laboratory facilities to furnish the necessary training and opportunities for original research.

Screening Procedures

A screening examination or other procedure designated by the department or program is to be administered before the student has taken more than 24 units (including research courses). Passing this procedure is prerequisite to continuation in the doctoral program. Students who fail the screening procedure will be advised that they are not recommended to continue in the Ph.D. program and that any additional work may not be counted toward the degree. Failure to undertake the screening procedure before completion of 24 units of course work may jeopardize additional units. Ideally, a faculty member will be appointed to serve as the student's administrative adviser until the student establishes an approved qualifying exam committee.

Course Requirements

The subject or field of concentration is called a major. The major is usually a departmental major, although several interdepartmental majors have been authorized.

Undergraduate prerequisite and graduate course work will be required in accordance with the regulations of the major department or program and the recommendation of the student's qualifying exam committee. Consult the appropriate departmental section of this catalogue for specific course requirements.

Appointment of the Qualifying Exam Committee

The qualifying exam committee is responsible for supervising the student's preparation for the exam and for

the fair and timely administration and evaluation of the written and oral parts of the examination. The Appointment of Qualifying Exam Committee form, available on the Graduate School Website, is used to establish the qualifying exam committee. The form requires the signature of each member of the committee, the department chair or program director, and the dean or dean's designate. The completed form is filed in the student's home department.

The qualifying exam committee is composed of no fewer than five members, although additional members may be included at the student's and committee chair's discretion. The committee chair and at least two additional members must have an appointment in the student's program. The committee chair must be from the student's home department. Faculty eligible to serve as committee members include tenured and tenure-track faculty, and non-tenure-track faculty of outstanding stature who have a documented record of exceptional expertise and superior achievement in a field relevant to the exam and have been approved by the dean of the school. At least three members of the committee must be tenured or tenure track. Visiting faculty may not serve on qualifying exam committees. The vice provost for graduate programs is an *ex officio* member of all qualifying exam committees.

Special permission for a member of the non-tenure track faculty to serve as chair of a Ph.D. student's qualifying exam committee may be granted by the dean of the degree program or his or her nominee, on an individual case basis upon the written request of the department chair. The request must establish that the person has an appointment in the student's program and that s/he is of outstanding stature and has a documented record of exceptional expertise and superior achievement in a field relevant to the qualifying exam.

Individual schools and programs may require the inclusion on the qualifying exam committee of a member from outside the student's program. If an outside member is required, it must be specified in the departments' or schools' sections in the Catalogue.

Changes in Qualifying Exam Committees

A Change of Committee form, which can be obtained from the Graduate School Website, must be completed whenever a change is made in a qualifying exam committee. All such changes *must be made in advance* of the qualifying examinations. Informal substitutions for either the written or oral parts of the qualifying examination are not permitted. Changes in a qualifying exam committee are not permitted between the written and oral portions of the examination. The examinations must be scheduled at times when it is possible for all members of the committee, including the outside member, to participate. Changes made without the prior approval of the dean of the degree program are not recognized and may result in the invalidation of the examination.

A student may not change committee members after failing the qualifying examination the first time. The student must be reexamined by the same faculty on the same subject matter. If a faculty member is unable to serve on the committee (for example, due to serious illness, retirement, or transfer to another institution), the dean of the degree program must be notified in writing in advance of the rescheduled exam in order to approve the change. The faculty replacement must be approved

by the dean of the degree program and the student must file a change of committee form well in advance of the exam.

Request to Take the Qualifying Exam

The Request to Take the Qualifying Examination form, available on the Graduate School Website, is used to affirm the student's readiness to take the exam. The Request to Take the Qualifying Exam requires the signature of each committee member, the department chair or program director, and dean or dean's designate. The signed form is filed with the department roughly 30 days before the beginning date of the written examination.

Qualifying Examination

The examination qualifying a student for candidacy for the Ph.D. degree is comprehensive in nature, partly written and partly oral, designed, at least in part, to test the student's fitness to undertake independent research. Prior to taking the qualifying examination, the student must have met all of the departmental requirements for doing so and have the recommendation of the qualifying exam committee. The qualifying examination should be taken no later than during the fifth semester.

To be eligible to take the qualifying examination, the student must have completed at least 24 units applicable toward the degree in residence at USC; must have achieved a GPA of at least 3.0 on all USC course work available for graduate credit; and must have the assurance that the qualifying exam committee has determined readiness to take the qualifying examination. Students with a master's degree in the same or very similar field may be approved to take the qualifying examination after the completion of 12 units and successful passage through the screening process; the GPA and qualifying exam committee approval requirements are the same as for students without a prior master's degree in the field of study. If not otherwise enrolled, a student must enroll in GRSC 800 during the semester in which the qualifying examination is to be taken. Students are strongly encouraged to take the qualifying examination during the first semester in which they are enrolled in GRSC 800, and should not enroll in more than three semesters of GRSC 800 before taking the qualifying examination.

All portions of the examination, both written and oral, should be completed within 60 days. Postponement of the examination after permission has been granted must have approval of the dean of the degree program.

The written examination will be prepared, administered on campus and read by the qualifying exam committee. In a few departments there will be a department-wide committee examining all doctoral students. When the student's written examination is satisfactory, an oral examination is given on the topics discussed in the written examination and/or touching upon additional material. If additional material is to be covered, the student should be notified of the content expectations in advance. A student must pass both the written and oral portions of the qualifying examination in order to pass the examination. The fact that a student has done well on the written examination is not to be construed to mean that the oral examination is to be a *pro forma* exercise.

The oral examination is a serious and integral part of the qualifying procedure and is administered on campus. Remote participation of a committee member requires approval from the vice provost for graduate programs. If on the written examination the judgment of the committee is such that an oral examination cannot counterbalance a poor performance, the committee is not obliged to give an oral examination and the report to the Graduate School will be one of failure. In the case where the written examination is marginal, the committee may use the oral examination as an opportunity to confirm or alter its judgment of the student's performance.

The examination may not be reported as being passed if there is more than one dissenting vote. Ph.D. examinations cannot be passed conditionally. A pass on the examination cannot be made contingent upon other factors such as the completion of additional course work, the preparation of extra research projects, etc.

During the oral examination, all members of the qualifying exam committee must be present and must render a judgment on the student's qualifying examination. Only the qualifying exam committee may participate in the oral portion of the examination.

A student who fails a qualifying examination may be permitted, at the discretion of the faculty, to take it a second time. The student may not be required to repeat parts of the qualifying examination that were passed on the first administration. The retaking of a failed qualifying examination must be scheduled at a time mutually satisfactory and not less than six months from the date of the first examination.

The second examination must be completed before the end of the second consecutive semester (excluding summer session) following the first examination. Requests for an exception must be approved by the vice provost for graduate programs. A student may not take the qualifying examination more than twice and must be appropriately enrolled at USC during the semester in which such an examination is taken or retaken. A student who fails the qualifying examination a second time may not continue in the degree program after the end of the semester in which the second examination was taken. No exceptions are allowed.

Report on the Ph.D. Qualifying Exam

At the conclusion of the qualifying exam, each member of the committee is asked to certify on the Report on the Ph.D. Qualifying Examination that: (1) the exam was appropriately rigorous; (2) the student's performance on the exam was at the doctoral level; and (3) the entire qualifying examination process was fair and in keeping with USC's academic and ethical standards. The Report on the Ph.D. Qualifying Examination is available to graduate advisers on the Graduate School Website.

Advancement to Candidacy

Graduate students are officially advanced to candidacy for the Ph.D. degree when they have completed the residency requirement and passed the written and oral portions of the Ph.D. qualifying examination upon the favorable recommendation of the qualifying exam committee to the Graduate School. All Ph.D. candidates are required to engage in original research.

Application for the Ph.D.

After being advanced to candidacy, students must contact their academic department to initiate an online degree check that is transmitted to the Degree Progress Department. Degree Progress counselors prepare a Degree Audit Report (STARS Report) for each student listing any remaining requirements. The requirements will not be checked or the degree conferred if the student has not applied.

Dissertation Committee

The dissertation committee is appointed as soon as possible after the examination has been passed and a dissertation topic approved. The committee should be appointed at least one month before the dissertation defense. The Appointment of Dissertation Committee form, available on the Graduate School Website, is used to establish the dissertation committee. The form requires the signatures of each member of the committee, the department chair or program director, and dean or dean's designate. The completed form is filed in the student's home department.

The dissertation committee is composed of at least three members, although additional members may be included at the student's and committee chair's discretion. The committee chair and at least one additional member must have an appointment in the student's program. The committee chair must be from the student's home department. Faculty eligible to serve as committee members include tenured and tenure track faculty, and non-tenure track faculty of outstanding stature who have a documented record of exceptional expertise and superior achievement in a field relevant to the dissertation and have been approved by the dean of the school. At least two members of the committee must be tenured or tenure track. Visiting faculty may not serve on dissertation committees. The vice provost for graduate programs is an *ex officio* member of all dissertation committees.

Special permission for a member of the non-tenure track faculty to serve as chair of a Ph.D. student's dissertation committee may be granted by the dean of the degree program or his or her nominee, on an individual case basis upon the written request of the department chair. The request must establish that the person has an appointment in the student's program and that s/he is of outstanding stature and has a documented record of exceptional expertise and superior achievement in a field relevant to the dissertation.

Individual schools and programs may require the inclusion on the dissertation committee of a member from outside the student's program. If an outside member is required, it must be specified in the departments' and schools' sections in the Catalogue.

Final Approval of the Dissertation

After the dissertation defense has been completed and after the committee determines that no further changes are required of the dissertation manuscript, each member certifies on the Final Approval of the Dissertation that: (1) the defense was appropriately rigorous; (2) the student's dissertation makes an original and substantial contribution to its field of study; and (3) the defense process was fair and in keeping with USC's academic and ethical standards. The Final Approval of the Dissertation is available on the Graduate School Website, and

it should be submitted to the Graduate School when it has been completed.

The committee must unanimously agree in order for the student to pass the defense.

Doctoral Dissertation

A dissertation is an original contribution to current knowledge in the field and a demonstration that the Ph.D. candidate has achieved sufficient mastery in the field to pursue independent research and scholarship. A dissertation represents the individual candidate's research and writing. In fields where collaborative research has become the norm, the candidate is the sole author of the dissertation and specifies his or her contribution to the research and also delineates colleagues' contributions.

Dissertations are expected to be written in English. Exceptions require the approval of the vice provost for graduate programs or her nominee prior to beginning the work and will be granted only when there is strong scholarly justification.

The student is expected to be enrolled in 794 Doctoral Dissertation each semester, except summer sessions, after admission to candidacy until all degree requirements are completed. Registration for 794 for the two semesters (excluding summer sessions) immediately following admission to candidacy is the minimum requirement entitling the candidate to dissertation supervision by the dissertation committee. Enrollment in 794 prior to admission to candidacy is not permitted and such registration is invalid. If the dissertation is not completed and accepted within two semesters the candidate must continue to register for 794 each semester thereafter until the dissertation has been approved and the approval of the Ph.D. dissertation has been signed by the dissertation committee. Students are expected to complete and defend their dissertation before they have enrolled in no more than five semesters of 794. Students may enroll in 794 during one summer session but may not register for more than two units of 794 during a given semester; individual exceptions require the approval of the dean of the degree program. No more than eight units of credit in 794 may be received, regardless of the number of semesters in which the candidate may be required to enroll. Department approval is required for registration in 794.

A candidate who finds it necessary to be excused from registration in 794 for a semester must request a leave of absence by petition to the dean of the program of study prior to the beginning of the semester. See Leave of Absence, page xx. Endorsements from the dissertation committee chair and department chair are required. During a leave of absence the candidate will not be entitled to assistance from the dissertation committee or to the use of university facilities. Considerations for approving a leave of absence include the student's progress to date in meeting the time schedules for the completion of degree requirements.

Defense of the Dissertation

After passing all required courses and the qualifying examination, and after meeting all other requirements, the candidate must write and defend the dissertation. The doctoral dissertation must be an original contribution to scholarship or scientific knowledge and must exemplify the high degree of scholarly advancement and

power of investigation demanded by the university for final recommendation to the doctorate. The dissertation defense is the culminating activity in the assessment of whether this standard has been met.

While the oral examination is open to the general university community, only the members of the dissertation committee have the authority to recommend acceptance of the dissertation. During the oral defense, all members of the dissertation committee must be present and must give a judgment on the student's defense. The recommendation must be unanimous.

If the defense is satisfactory, the committee then signs the Approval to Submit Defended and Final Copy of Dissertation form. If additional work is required, the form must be signed only on full completion. Departments differ concerning the time of the defense of the dissertation. The student's dissertation committee is responsible for the content and bibliographical consistency of the dissertation.

Dissertation Submission

Refer to the Theses and Dissertations section on page xx, for more information on the submission process.

Diploma in Innovation

The USC Diploma in Innovation is a signature one-year program designed to enable current USC Ph.D. students to collaborate in translating their academic interests into innovative projects with tangible benefits to society. This selective program is offered free of charge to current USC Ph.D. students in good standing from all disciplines, whose proposals are accepted by a faculty committee.

All USC Ph.D. students admitted to the Diploma in Innovation program will be required to register in GRSC

791ab Directed Study Leading to the Diploma in Innovation. In addition to satisfactory completion of these courses, students will present their final projects to a faculty committee, which will determine whether the students receive the Diploma in Innovation.

Courses of Instruction

GRADUATE STUDIES (GRSC)

The terms listed are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

GRSC 596 Internship for Curricular Practical Training (1, FaSpSm) Part-time or full-time, practical work experience in the student's field of study. The internship must be located at an off-campus facility. Students are individually supervised by faculty. May not be taken until the student has completed at least one semester of enrollment in the graduate program with a cumulative 3.0 GPA. Graduate standing. Graded CR/NC.

GRSC 610 The Innovation Process: Development, Diffusion and Leadership (4, Fa) Exploration of general principles and evolution of innovation, theoretical perspectives on the innovation process, organizing and leadership for innovation, and practical tools for innovation development, diffusion, market acceptance, and business planning. Open only to doctoral students.

GRSC 612 Legal Issues and Financing of Innovation (4, Fa) Exploration of legal issues of innovation as well as issues surrounding financing the development and commercialization of innovation. Open only to doctoral students.

GRSC 615 Disciplinary Perspectives on Innovation (4, Fa) A deeper understanding of the innovation process via a survey of various disciplines' approaches to the subject. Open only to doctoral students.

GRSC 791ab Directed Studies (2-2) Directed studies leading to the Diploma in Innovation. Graded IP/CR/NC. Open only to doctoral students.

GRSC 800 Studies for the Qualifying Examination (0, FaSpSm) *Prerequisite:* permission of the Graduate School. Graded CR/NC.

GRSC 810 Studies for Master's Examination (0, FaSpSm) *Prerequisite:* completion of all course work for the master's degree. Permission of the Graduate School. Graded CR/NC.

GRSC 850ab The Professoriate: Preparing for the Future (2,2,FaSp) Preparation for academic careers: various methodologies and approaches to teaching, learning, assessment, and research; statements of research and teaching philosophies; creation of online academic portfolio. Graded IP/CR/NC. Open only to doctoral students.

Interdisciplinary Programs

Undergraduate Programs

Degrees

Bachelor of Arts

American Studies and Ethnicity (see page xx)
American Studies and Ethnicity (African American Studies) (see American Studies and Ethnicity, page xx)
American Studies and Ethnicity (Asian American Studies) (see American Studies and Ethnicity, page xx)
American Studies and Ethnicity (Chicano/Latino Studies) (see American Studies and Ethnicity, page xx)
Animation and Digital Arts (see Cinematic Arts, page xx)
Cognitive Science (see page xx)
East Asian Area Studies (see page xx)
Environmental Science and Health (see Environmental Studies, page xx)
Environmental Studies (see page xx)
Gender Studies (see page xx)
Global Studies (see Anthropology, page xx)
Health and Humanity (see page xx)
History and Social Science Education (see History, page xx)
Interdisciplinary Archaeology (see Religion, page xx)
Interdisciplinary Studies (see page xx)
International Relations (Global Business) (see International Relations, page xx)
Law, History and Culture (see History, page xx)
Linguistics/East Asian Languages and Cultures (see Linguistics, page xx)
Linguistics/Philosophy (see Linguistics, page xx)
Linguistics/Psychology (see Linguistics, page xx)
Middle East Studies (see page xx)
Narrative Studies (see English, page xx)
Neuroscience (see page xx)
Philosophy, Politics and Law (see Philosophy, page xx)
Political Economy (see Economics, page xx)
Religion, emphasis in Judaic Studies (see Religion, page xx)
Social Sciences, emphasis in Economics (see Economics, page xx)
Social Sciences, emphasis in Psychology (see Psychology, page xx)

Visual and Performing Arts Studies (see Dramatic Arts, page xx)

Bachelor of Science

Biochemistry (see Biological Sciences, page xx)
Biophysics (see Physics and Astronomy, page xx)
Business Administration (Cinematic Arts) (see Business, page xx)
Business Administration (International Relations) (see Business, page xx)
Computational Neuroscience (see Neuroscience, page xx)
Computer Science/Business Administration (see Engineering, page xx)
Economics/Mathematics (see Mathematics, page xx)
Environmental Science and Health (see Environmental Studies, page xx)
Environmental Studies (see Environmental Studies, page xx)
GeoDesign (see Spatial Sciences Institute, page xx)
Global Health (see Medicine, page xx)
Physical Sciences (see Physics, page xx)
Physics/Computer Science (see Physics and Astronomy, page xx)

Minors

American Popular Culture (see American Studies and Ethnicity, page xx)
American Studies and Ethnicity (see page xx)
Animation and Digital Arts (see Cinematic Arts, page xx)
Arabic and Middle East Studies (see Linguistics, page xx)
Biotechnology (see Biological Sciences, page xx)
Business Law (see Business, page xx)
Children and Families in Urban America (see Social Work, page xx)
Cinema-Television for the Health Professions (see Cinematic Arts, page xx)
Communication and the Entertainment Industry (see Communication, page xx)
Communication Design (see Fine Arts, page xx)
Communication Law and Media Policy (see Communication, page xx)

Computational Biology and Bioinformatics (see Biological Sciences, page xx)
Computer and Digital Forensics (see Engineering, page xx)
Construction Planning and Management (see Engineering, page xx)
Consumer Behavior (see Business, page xx)
Craniofacial and Dental Technology (see Dentistry, page xx)
Critical Approaches to Leadership (see page xx)
Cultural Studies (see English, page xx)
Cultures and Politics of the Pacific Rim (see East Asian Languages and Cultures, page xx)
Digital Studies (see Cinematic Arts, page xx)
Early Modern Studies (see English, page xx)
East Asian Area Studies (see page xx)
Engineering Management (see Engineering, page xx)
Engineering Technology Commercialization (see Engineering, page xx)
Enterprise Information Systems (see Engineering, page xx)
Environmental Studies (see page xx)
Folklore and Popular Culture (see Anthropology, page xx)
Forensics and Criminality (see Sociology, page xx)
Game Animation (see Cinematic Arts, page xx)
Game Audio (see Cinematic Arts, page xx)
Game Entrepreneurism (see Cinematic Arts, page xx)
Gender Studies (see page xx)
Geobiology (see Earth Sciences, page xx)
Global Communication (see Communication, page xx)
Health Care Studies (see Medicine, page xx)
Health Communication (see Communication, page xx)
Health Policy and Management (see Public Policy, page xx)
Human Rights (see Political Science, page xx)
Innovation: The Digital Entrepreneur (see Engineering, page xx)
Interactive Multimedia (see Engineering, page xx)
Interdisciplinary Archaeology (see Religion, page xx)
International Policy and Management (see International Relations, page xx)
Jewish American Studies (see American Studies and Ethnicity, page xx)
Judaic Studies (see page xx)
Korean Studies (see East Asian Area Studies, page xx)

Latin American Studies (see Spanish and Portuguese, page xx)
 Law and Public Policy (see Public Policy, page xx)
 Law and Society (see Political Science, page xx)
 Managing Human Relations (see Sociology, page xx)
 Mathematical Finance (see page xx)
 Middle East Studies (see page xx)
 Musical Theatre (see Music, page xx)
 Natural Science (see Biological Sciences, page xx)
 Neuroscience (see page xx)
 Nonprofits, Philanthropy and Volunteerism (see Public Policy, page xx)
 Performing Arts Studies (see Dramatic Arts, page xx)
 Photography and Social Change (see Sociology, page xx)
 Political Organizing in the Digital Age (see Political Science, page xx)

Psychology and Law (see Psychology, page xx)
 Race, Ethnicity and Politics (see Political Science, page xx)
 Resistance to Genocide (see History, page xx)
 Russian Area Studies (see Slavic Languages and Literatures, page xx)
 Science, Technology and Society (see Sociology, page xx)
 Science Visualization (see Cinematic Arts, page xx)
 Social Entrepreneurship (see Business, page xx)
 Southeast Asia and Its People (see Anthropology, page xx)
 Spatial Studies (see Spatial Sciences Institute, page xx)
 Thematic Approaches to the Humanities and Society (see Thematic Option, page xx)
 Theories of Art (see Philosophy, page xx)
 3-D Animation (see Fine Arts, page xx)

3-D Art for Games (see Fine Arts, page xx)
 2-D Art for Games (see Fine Arts, page xx)
 Video Game Design and Management (see Engineering, page xx)
 Visual Culture (see Art History, page xx)

Programs

Collaborative Learning Projects (see Learner Centered Curricula, page xx)
 Honors in Multimedia Scholarship (see Cinematic Arts, page xx)
 Individual Programs of Study (see Learner Centered Curricula, page xx)
 Liberal Arts Modules (see Thematic Option, page xx)

Graduate and Professional Programs

Degrees

Master's Degrees

Cell and Neurobiology (see Medicine, page xx)
 Clinical, Biomedical and Translational Investigations (see Medicine, page xx)
 Construction Management (see Engineering, page xx)
 Digital Supply Chain Management (see Business, page xx)
 Green Technologies (see Engineering, page xx)
 Health Economics (see Pharmacy, page xx)
 Health Systems Management Engineering (see Engineering, page xx)

Medical Device and Diagnostic Engineering (see Engineering, page xx)
 Philosophy and Law (see Philosophy, page xx)
 Physiology and Biophysics (see Medicine, page xx)
 Public Diplomacy (see Communication, page xx)

Graduate Certificates

Digital Media and Culture (see Cinematic Arts, page xx)
 Engineering Technology Commercialization (see Engineering, page xx)
 Health Systems Operations (see Engineering, page xx)
 Innovation (see Graduate School, page xx)
 Optimization and Supply Chain Management (see Business, page xx)

Sustainable Cities (see Public Policy, page xx)
 Transportation Systems (see Engineering, page xx)
 Visual Studies (see Art History, page xx)

Doctor of Philosophy

Computational Biology and Bioinformatics (see Biological Sciences, page xx)
 Molecular Pharmacology and Toxicology (see Pharmacy, page xx)
 Pharmaceutical Sciences (see Pharmacy, page xx)
 Physiology and Biophysics (see Medicine, page xx)

USC School of Architecture



Created by 14 USC School of Architecture undergraduates, the "Glass Pavilion" installation was inspired by the simple form and folding techniques of origami designs. The structure had over 800 polycarbonate pieces fashioned into isosceles triangles, generating light reflections that provide unique spatial experiences. The students' blog about the installation generated interest as well as news stories.

The USC School of Architecture offers undergraduate, graduate and doctoral education in architecture and architectural studies, landscape architecture, heritage conservation and building science. Its faculty is active in professional practice, in design research, in the supervision of programs at the Gamble House and Freeman House and in extended professional education.

Work in the school is conducted in an intellectual climate, which promotes inquiry, introduces principles and values and teaches the disciplines necessary to work in collaboration with other professionals to develop design and research excellence.

The school is located in the center of Los Angeles, the second largest urban region in the country, which offers a unique understanding of 21st century growth and change. In such an environment the possibilities for teaching and learning are extraordinary.

The school is highly selective in its admissions and enjoys the strong support of alumni and the professions it serves. The opportunity exists for students to have close contact with faculty, other students and practicing architects.

An architecture curriculum was initiated at USC in 1914. In 1919, a Department of Architecture was created and a separate School of Architecture was organized in 1925. The school shares Watt and Harris Halls with the USC Roski School of Fine Arts and the Fisher Museum of Art.

USC School of Architecture**Watt Hall 204****(213) 740-2723****FAX: (213) 740-8884****arch.usc.edu****Administration**Qingyun Ma, M.Arch., *Dean*Marc Schiler, M.Arch.Sci., *Vice Dean*Gail Peter Borden, M.Arch., *Discipline Head of Architecture Programs*Alice Kimm, M.Arch., *Director, Undergraduate Programs*Douglas E. Noble, Ph.D., *Chair, Ph.D. Program, Discipline Head, Chase L. Leavitt Graduate Program of Building Science*Trudi Sandmeier, M.A., *Discipline Head of Heritage Conservation Programs*Robert S. Harris, MFA (Arch.), *Discipline Head of Landscape Architecture Programs*Edward R. Bosley, MBA, *James N. Gamble Director of the Gamble House***Faculty***Della and Harry MacDonald Dean's Chair in Architecture:* Qingyun Ma, M.Arch.*Jon Adams Jerde, FAIA Chair in Architecture:* Tom Kundig, FAIA, M.Arch.*MacDonald and Diane Rusling Becket Professor of Community Design:* Charles A. Lagreco, MFA (Arch.)*Judge Widney Professor of Architecture:* Frank O. Gehry, FAIA, M.Arch.*Nancy M. and Edward D. Fox Urban Design Critic:* Julie Snow, B.Arch.*A.C. Martin Visiting Professor of Architectural Design:* Oliver Schulze, B.Arch.*Professors:* Kim Coleman, M.Arch.; Diane Ghirardo, Ph.D.; John V. Mutlow, M.Arch. (U.D.); Victor Regnier, M.Arch.*; Goetz Schierle, M.Arch., Ph.D.Arch.; Marc Schiler, M.Arch.Sci.; James Steele, Ph.D.; John Wilson, Ph.D.*Associate Professors:* Gail Peter Borden, M.Arch.; Charles Lagreco, MFA (Arch.); Graeme M. Morland, Dipl.Arch.; Amy Murphy, MFA; Douglas E. Noble, Ph.D.*Assistant Professors:* Rachel Berney, Ph.D.; Kenneth Breisch, Ph.D.; Anders Carlson, Ph.D.; Joon-Ho Choi, Ph.D.; Vittoria di Palma, Ph.D.; David Gerber, D.Des.; Alvin Huang, M.Arch.; Victor Jones, M.Arch.; Karen M. Kensek, M.Arch.; Kyle Konis, Ph.D.; Doris Sung, M.Arch.*Visiting Professors:* Manuel Delanda, Ph.D.; Mia Lehrer, FASLA, M.L.Arch.*Associate Professors of the Practice of Architecture:* Alice Kimm, M.Arch.; Lee Olvera, M.Arch.; Trudi Sandmeier, M.A.; Selwyn Ting, M.Arch.*Assistant Professor of the Practice of Architecture:* Lauren Matchison, M.A.*Adjunct Professors:* Douglas A. Campbell, M.L.Arch.; Regula F. Campbell, M.Arch.; Mark Cigolle, M.Arch.; Peyton Hall, M.E.D.; Scott Johnson, M.Arch.; Neil Leach, Ph.D.; David C. Martin, M.Arch.; Murray Milne, M.Arch., M.S.; Lorcan O'Herlihy, M.Arch.; Robert Perry, MLA; James Tyler, BFA, B.Arch.*Adjunct Associate Professors:* T. Jeff Guh, Ph.D.; Yo-ichiro Hakomori, Ph.D.; Michael Hricak, M.Arch.; Andrew Liang, M.Arch.; Travis Longcore, Ph.D.; Warren Techentin, M.Arch.; Olivier Touraine, Dipl. Ing. (Arch.); Dimitry Vergun, M.S.; Edwin Woll, Ph.D.; Eui-Sung Yi, M.Arch.*Adjunct Assistant Professors:* Valery Augustin, M.Arch.; Tigran Ayrapetyan, M.S.; Mario Cipresso, M.Arch.; Janek Dombrowa, B.S. (Arch); Anthony Guida, M.Arch.; Eric Haas, M.Arch.; Christoph Kapeller, M.Arch.; Erik Mar, M.Arch.; Alexander Robinson, M.L.Arch.; Christopher Warren, M.Arch.*Senior Lecturers:* Michael Arden, M.A.; Susanna Seierup, M.Arch.*Lecturers:* Ric Abramson, M.Arch.; Carlo Aiello, M.S. (Arch.); Rosalio Arellanes, M.Arch.; Dana Bauer, M.Arch.; Victoria Turkel-Behner, Ph.D.; Erin Besler, M.Arch.; Vinayak Bharné, M.Arch.; Biayna Bogosian, M.S. (Arch.); Justin Brechtel, M.S. (Arch.); Laurel Broughton, M.Arch.; Nefeli Chatzimina, M.S. (Arch.); Mina Mei-Szu Chow, M.Arch.; Victoria Coaloa, M.Arch.; Tony Cocea, M.S.; John Dutton, M.Arch.; Liz Falletta, M.Arch.; Miller Fong, B.A.Arch.; John Frane, M.Arch.; Emily Gabel-Luddy, MLA; Veronica Galen, B.E.D.; Sophia Gruzdy, M.Arch.; Jerry Hastings, B.S.; Ying-Yu Hung, M.L.Arch.; Jason Kerwin, M.Arch.; Jeffrey Kim, M.S.; Andy Ku, M.Arch.; Cara Lee, M.Arch.; John Lesak, M.Arch.; Lisa Little, M.Arch.; Esther Margulies, M.L.Arch.; Leonard Marvin, MBA; Ilaria Mazzoleni, MBS; Scott Mitchell, M.Arch.; Brendan Muha, M.Arch.; Kristine Mun, Ph.D.; Stephan Mundwiler, M.Arch.; Aaron Neubert, M.Arch.; Eric Nulman, M.Arch.; Gary Paige, B.Arch.; Na Ra Park, MLA; Jay Platt, M.S.; Mary Ringhoff, M.A.; Marcos Sánchez, M.Arch.; Manuel Shvartzberg, M.A.; Colin Sieburgh, M.Arch.; Jennifer Siegal, M.Arch.; Peter Simmonds, Ph.D.; Takako Tajima, MLA; Brian Tichenor, M.L.Arch.; David Ulin, MFA; Scott Uriu, B.Arch.; Geoffrey von Oeyen, M.Arch.; Roland Wahroos-Ritter, Dipl.Ing.*Emeritus Professors:* James Ambrose, M.S.; Frank Dimster, M.Arch.; Robert Harris, MFA (Arch.); Samuel T. Hurst, M.Arch.; Ralph Knowles, M.Arch.*; Roger Sherwood, M.S.Arch., M.C.R.P.**Recipient of university-wide or school teaching award.***Degree Programs**

The School of Architecture offers curricula leading to the following degrees.

Bachelor of Architecture: a five-year undergraduate accredited professional degree program.**Bachelor of Science in Architectural Studies:** a four-year undergraduate non-professional architectural studies degree program providing specialization in related fields and an alternative path to graduate studies in architecture and other design fields.**Bachelor of Landscape Architecture:** a four-year undergraduate degree program concentrating on design of spaces in the urban environment.**Minor in Architecture:** provides the flexibility of complementing a student's major with an area of specialization. Not available for architecture majors.**Minor in Landscape Architecture:** provides students with the ability to integrate the natural and cultural profession of landscape architecture into their course of study. Not available for architecture majors.**Master of Architecture (two tracks):** The first track is a 49-unit, three-semester program for students who hold a first professional degree from an accredited school of architecture. The second track is a 64-unit, two-year accredited degree for students holding a pre-professional degree with a major in architecture.**Master of Heritage Conservation:** a 49-unit program designed to prepare individuals for work in heritage conservation and its allied disciplines, including architecture, urban planning, cultural resource management, real estate development, construction and materials conservation.**Master of Landscape Architecture:** a 96-unit, six-semester curriculum for students with no prior degree in architecture, landscape architecture or environmental design; a 64-unit, four-semester curriculum for students who hold a first non-accredited degree in architecture, landscape architecture or environmental design; a 48-unit, three-semester curriculum for students who hold an accredited Bachelor of Landscape Architecture degree or the equivalent.**Master of Building Science:** a 48-unit, two-year program for applicants who hold an architecture, engineering or science-related degree (e.g., Bachelor of Architecture, Bachelor of Architectural Engineering, Bachelor of Science in Engineering, Environmental Studies, Physics or Mathematics). Students with five-year professional degrees in architecture and a minimum of five years of experience may be given advanced standing.**Dual Degree in Architecture and Planning:** a 72-unit program leading to the post-professional Master of Architecture and the Master of Planning degrees. Admission to both degree programs is required.**Dual Degree in Landscape Architecture and Planning:** a 66-, 82- or 108-unit program leading to the Master of Landscape Architecture and Master of Planning degrees. Admission to both degree programs is required.**Doctor of Philosophy in Architecture:** This program is designed to prepare individuals for university level

teaching and professional research and for leadership positions in industry and professional architectural practice.

Certificate in Architecture: The focus of this program is on understanding the broad and complex role of architecture within the urban and cultural context. Studies focus on cities and architecture throughout the world where conditions of increasing density, environmental challenges and cultural complexity require design initiatives that support amenity, sustainability and cultural meaning. The certificate is open to graduate students not pursuing a Master of Architecture degree.

Certificate in Building Science: This program is intended as a supplementary credential for students enrolled in graduate course work in architecture, landscape architecture, historic preservation, urban planning or related disciplines, and also for practicing design and planning professionals with undergraduate or graduate degrees and related experience.

Certificate in Heritage Conservation: This program is for those who wish to augment their current work in

heritage conservation, and for graduate students who wish to obtain a complementary specialization in conjunction with their degree.

Certificate in Landscape Architecture: This program provides an opportunity for professionals and graduate students to develop understandings and skills related to the basic subjects inherent in the field of landscape architecture.

National Architecture Accrediting Board Statement

In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture and the Doctor of Architecture. A program may be granted a six-year, three-year or two-year term of accreditation, depending on the extent of its conformance with established educational standards.

Doctor of Architecture and Master of Architecture degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

The University of Southern California School of Architecture offers the following NAAB-accredited degree programs:

B. Arch. (160 undergraduate credits) Next accreditation visit for B.Arch.: 2014

M. Arch. (pre-professional degree + 64 graduate credits) Next accreditation visit for M. Arch.: 2014

National Landscape Architecture Accreditation Board Statement

The USC Master of Landscape Architecture first professional curricula (three-year and two-year curricula) are accredited by the American Society of Landscape Architects Landscape Architecture Accreditation Board (LAAB). The LAAB conditions of accreditation (including the student performance criteria) are posted on the ASLA Website, asla.org/AccreditationLAAB.aspx.

Undergraduate Degrees

Bachelor of Architecture

The bachelor's degree program begins intensively with architectural studies in the first year and provides for a mix of architectural and general university studies throughout the program. The curriculum includes two cycles of development. The first cycle of six semesters provides a foundation in understanding architecture, concluding with integrative studies after two years of introductory work. The second cycle, four semesters, provides the opportunity to explore many aspects of architecture and to develop individual strengths and interests. The second cycle, and the program, concludes with a comprehensive project with a component of directed research defined by the student based on choice and initiative.

Admission as a First Year Student

All applicants to the School of Architecture must complete the university application and submit it to the USC Office of Admission along with Scholastic Aptitude Test (SAT) or other test scores. All applicants, including international students, must submit a portfolio.

Admission with Advanced Placement

It is possible, in selected instances, that a transfer student from an accredited community college or other university may be eligible for advanced placement at the second-year level if previous work includes a minimum of 32 semester units of acceptable academic credit in a pre-architecture program. The academic credit must include 8 semester units in architectural design or environmental design. Students accepted for advanced placement must still comply with all requirements for the degree.

Advanced placement applicants are required to submit a design portfolio to the School of Architecture.

Summer Transfer Courses

A summer design studio and drawing course allows highly qualified students transferring from community college or other university programs to be evaluated for advanced placement in the fall semester. Applicants must submit a university application and portfolio by February 1 for consideration. During the summer transfer courses, students must demonstrate significant design and drawing skills to justify advanced placement. Successfully completing these summer transfer courses allows students to reduce the required 10-semester design sequence by two semesters, reducing USC residency to four years. This either provides for advanced placement into the second year or gives credit for ARCH 102abL and ARCH 105L if these courses are passed with grades of B or above. For more information, contact the school at (213) 740-2420.

Transfer students who are admitted with fewer than 32 units of college level work and who have only limited drawing or design skills may be considered for placement in the first year of the five-year design sequence. Previous academic work may in part be applied toward required and elective courses for the five-year Bachelor of Architecture program.

Advisement

The School of Architecture maintains student advisers for the benefit of all students in the school. Soon after being accepted, new students are advised to make an appointment for pre-registration advisement. A complete record is kept of the progress for each student while in attendance. An individual appointment with an adviser may be scheduled at any time during the academic year. In addition, students are strongly encouraged to attend a university orientation session.

Degree Requirements

Accredited degree programs awarding the B.Arch. degree must require a minimum of 150 semester credit hours or the quarter-hour equivalent, in academic course work in general studies, professional studies and electives. The curriculum leading to the architecture degree must include at least 45 credit hours, or the quarter-hour equivalent, outside of architectural studies either as general studies or as electives with content other than architectural.

Design Studio Grade Point Average Requirement

Less than average work in design is not considered sufficient for a professional degree. Students must receive a grade of C (2.0) or above in each semester of design (ARCH 102abL, ARCH 202abL, ARCH 302abL, ARCH 402abCL, ARCH 502aL) in order to continue in the design sequence and to graduate. Students will be required to repeat the course until such a grade is achieved.

Transfer Limit for Design Studio Credit

School of Architecture majors enrolling for a semester of study off campus are limited to the transfer of only one design studio course within the ARCH 402abCL sequence. Approval of transfer credit will be dependent upon portfolio review by an appointed faculty review committee.

Pass/No Pass Courses

Architecture students are permitted to take a maximum of 24 units of non-architecture electives, exclusive of the writing requirements, MATH 108 and the PHYS 125L requirement, on a pass/no pass basis. No more than 4 units of pass/no pass courses may be applied to general education requirements; no more than 4 units may be taken in one semester. Students who have taken non-architecture courses pass/no pass in the past

(i.e., before admission to architecture) may count such pass/no pass courses toward, but not in addition to, the maximum of 24 units.

Schedule Choices

Students in upper division (ARCH 402abL) may substitute any fall or spring semester by completing degree requirements, including design studio, by enrolling during summer session. This substitution does not provide for acceleration of the degree but does allow for make up so that students may get back on schedule for the five-year degree.

Time Limits

While there are no specific time limits for completing the bachelor's degree (except in the case of discontinued programs) the School of Architecture may require additional course work of students who remain in the degree program beyond six years.

Five-Year Curriculum for the Bachelor of Architecture Degree

FIRST YEAR, FIRST SEMESTER		UNITS
ARCH 102aL	Architectural Design I	4
ARCH 105L	Fundamentals of Design Communication	2
ARCH 114	Architecture: Culture and Community	2

General Education	Social Issues	4
MATH 108*	Introductory College Mathematics, or	
WRIT 140*	Writing and Critical Reasoning	4
		16

FIRST YEAR, SECOND SEMESTER		UNITS
ARCH 102bL	Architectural Design I	4
ARCH 214a	World History of Architecture	3
PHYS 125L**	Physics for Architects	
	General Education, or	4
WRIT 130*	Analytical Writing	4
		15

SECOND YEAR, FIRST SEMESTER		UNITS
ARCH 202aL	Architectural Design II	6
ARCH 213a	Building Structures and Seismic Design	3
ARCH 214b	World History of Architecture	3
General Education		4
		16

SECOND YEAR, SECOND SEMESTER		UNITS
ARCH 202bL	Architectural Design II	6
ARCH 211	Materials and Methods of Building Construction	3
ARCH 213b	Building Structures and Seismic Design	3
General Education		4
		16

THIRD YEAR, FIRST SEMESTER		UNITS
ARCH 215	Design for the Thermal and Atmospheric Environment	3
ARCH 302aL	Architectural Design III	6

ARCH 313	Design of Building Structures	3
General Education		4
		16

THIRD YEAR, SECOND SEMESTER		UNITS
ARCH 302bL	Architectural Design III	6
ARCH 315	Design for the Luminous and Sonic Environment	3
ARCH 411	Architectural Technology	3
General Education		4
		16

FOURTH YEAR, FIRST SEMESTER		UNITS
ARCH 314	History of Architecture: Contemporary Issues	3
ARCH 402aL	Architectural Design IV	6
ARCH 525	Professional Practice: Pre-Design, Project and Office Administration	3
Electives		4
		16

FOURTH YEAR, SECOND SEMESTER		UNITS
ARCH 402bL	Architectural Design IV	6
ARCH 526	Professional Practice: Legal and Economic Context, Project Documentation	3
Architecture history electives		2-4
Electives		4-6
		17

FIFTH YEAR, FIRST SEMESTER		UNITS
ARCH 402cL	Architectural Design IV	6
ARCH 501	Critical Topics in Architecture	2
WRIT 340	Advanced Writing	4
Electives		4
		16

FIFTH YEAR, SECOND SEMESTER		UNITS
ARCH 502aL	Architectural Design V	6
Electives		10
		16

**All students must enroll in WRIT 140 in the fall except those who are required to take MATH 108. These students must take WRIT 130 the following spring.*

***PHYS 125L fulfills the General Education requirement in Category III. The PHYS 125L requirement may also be fulfilled by PHYS 135abL; 4 units will be applied toward the B.Arch. and 4 will count as electives.*

Core Requirements

In order to take advantage of elective opportunities in the advanced program, students must complete the following courses before the end of the special integrative semester (third year, first semester): ARCH 102abL, ARCH 105L, ARCH 114, ARCH 202abL, ARCH 211, ARCH 213ab, ARCH 214ab, ARCH 215; MATH 108; PHYS 125L; and WRIT 140 or WRIT 130.

Allocation of Elective Units

A total of 20 units of electives and a 4-unit diversity course is included toward completion of the 160 units for the degree.

Professional Electives

A minimum of 12 units in architecture is required.

Free Electives

An additional 12 units in any category of professional courses, humanities, social sciences and communication and natural sciences. Natural sciences include astronomy, biological sciences, chemistry, computer science, geological sciences, mathematics (excluding MATH 108) and physics (excluding PHYS 125L or PHYS 135abL). One of these courses must satisfy the diversity requirement.

General Education Requirements

The university's general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. This program requires six courses in different categories, plus writing and diversity requirements, which together comprise the USC Core. See pages xx and xx for more information.

Students who are required to take MATH 108 during the freshman year may take their Social Issues course in the fall and WRIT 130 separately in the spring.

Bachelor of Science, Architectural Studies

The Bachelor of Science in Architectural Studies program begins intensively with architectural studies in the first two years and provides a mix of architectural and general university studies throughout the program. The curriculum includes a core program in the first two years identical to the Bachelor of Architecture professional degree program. The last two years provide the opportunity to explore many aspects of architecture and related fields and to develop individual strengths and interests. Students take an introductory course in specialization in the second year, which provides an introduction to related fields and alternative degree options. Students can elect to move into the four-year non-professional B.S. in Architectural Studies program with a degree plan identifying electives fulfilling an area of concentration. The program is concluded with a seminar with all degree candidates, allowing for collaborative work on areas of common interest.

Admission as a First-year Student

All applicants to the School of Architecture must complete the university application and submit it to the USC Office of Admission along with Scholastic Aptitude Test (SAT) or other test scores. All applicants, including international students, must submit a portfolio.

Admission with Advanced Placement

It is possible, in selected instances, that a transfer student from an accredited community college or other university may be eligible for advanced placement at the second-year level if previous work includes a minimum of 32 semester units of acceptable academic credit in a pre-architecture program. The academic credit must include 8 semester units in architectural design or environmental design. Students accepted for advanced placement must still comply with all requirements for the degree.

Advanced placement applicants are required to submit a design portfolio to the School of Architecture.

Summer Transfer Studio

A summer design studio allows highly qualified students transferring from community college or other university programs to be evaluated for advanced placement in the fall semester. Applicants must submit a university application and portfolio by February 1 for consideration. During the summer studio, transfer students must demonstrate significant design and drawing skill to justify advanced placement. Transfer students who are admitted with fewer than 32 units of college level work and who have only limited drawing or design skills may be considered for placement in the first year of the four-year program. Previous academic work may in part be applied toward required and elective courses for the four-year B.S. in Architectural Studies program. For more information about this program, contact the school at (213) 740-2420.

Advisement

The School of Architecture maintains student advisers for the benefit of all students in the school. Soon after being accepted, new students are advised to make an appointment for pre-registration advisement. A complete record is kept of the progress for each student while in attendance. Appointments with an adviser may be scheduled at any time during the academic year.

Design Studio Grade Point Average Requirement

Less than average work in design studio is not considered sufficient for a continuation in the design studio sequence. Students must receive a grade of C (2.0) or above in each semester of design in order to continue in the design sequence. Students in the first two years of the program are required to repeat the course until such a grade is achieved.

Pass/No Pass Courses

Architecture students are permitted to take a maximum of 24 units of non-architecture electives, exclusive of the writing requirements, MATH 108 and the PHYS 125L requirement, on a pass/no pass option. No more than 4 units of pass/no pass courses may be applied to general education requirements; no more than 4 units may be taken in one semester. Students who have taken non-architecture courses pass/no pass in the past (i.e., before admission to architecture) may count such pass/no pass courses toward, but not in addition to, the maximum of 24 units.

Time Limits

While there are no specific time limits for completing the B.S. in Architectural Studies degree (except in the case of discontinued programs) the School of Architecture may require additional course work of students who remain in the degree program beyond six years.

Four-Year Curriculum for the Bachelor of Science in Architectural Studies Degree

FIRST YEAR, FIRST SEMESTER		UNITS
ARCH 102aL	Architectural Design I	4
ARCH 105L	Fundamentals of Design Communication	2
ARCH 114	Architecture: Culture and Community	2
MATH 108*	Precalculus, or	
WRIT 140*	Writing and Critical Reasoning	4
General Education	Social Issues	4
		16

FIRST YEAR, SECOND SEMESTER		UNITS
ARCH 102bL	Architectural Design I	4
ARCH 214a	World History of Architecture	3
PHYS 125L**	Physics for Architects	4
WRIT 130***	Analytical Writing, or	
General Education		4
		15

SECOND YEAR, FIRST SEMESTER		UNITS
ARCH 202aL	Architectural Design II	6
ARCH 213a	Building Structures and Seismic Design	3
ARCH 214b	World History of Architecture	3
General Education		4
		16

SECOND YEAR, SECOND SEMESTER		UNITS
ARCH 202bL	Architectural Design II	6
ARCH 211	Materials and Methods of Building Construction	3
ARCH 213b	Building Structures and Seismic Design	3
General Education		4
		16

THIRD YEAR, FIRST SEMESTER		UNITS
ARCH 215	Design for the Thermal and Atmospheric Environment	3
ARCH 313	Design of Building Structures	3
ARCH 370	Architectural Studies — Expanding the Field	2
WRIT 340	Advanced Writing, or	
General Education		8
		16

THIRD YEAR, SECOND SEMESTER		UNITS
ARCH 315	Design for the Luminous and Sonic Environment	3
ARCH 411	Architectural Technology	3
Diversity		4
Professional electives		6
		16

FOURTH YEAR, FIRST SEMESTER		UNITS
ARCH 314	History of Architecture: Contemporary Issues	3
ARCH 525	Professional Practice: Pre-Design, Project and Office Administration	3
Professional electives		10
		16

FOURTH YEAR, SECOND SEMESTER		UNITS
ARCH 470	Capstone Seminar	4
Electives		8
Professional electives		5
		17

Total minimum units required: 128

**All students must enroll in WRIT 140 in the fall except those who are required to take MATH 108. These students must take WRIT 130 the following spring.*

***PHYS 125L fulfills the General Education requirement in Category III. The PHYS 125L requirement can also be fulfilled by PHYS 135aBL; 4 units will be applied toward the B.S. and 4 will count as electives.*

****Students who take WRIT 130 are advised to fulfill their sixth General Education requirement concurrently with the Diversity requirement or with a Professional Architecture elective, or with their free electives.*

Requirements for B.S. in Architectural Studies Degree

A total of 25 units of professional electives, including ARCH 470 Capstone Seminar, are required in an area of specialization, which must be selected from the accepted professional elective offerings in the School of Architecture or with consultation and approval of the program adviser. This is in addition to the core, elective and general education requirements of the Bachelor of Architecture degree, which are identical for the first two years of the Bachelor of Science in Architectural Studies. In the third and fourth year of the program, the requirements for the Bachelor of Architecture design studios, ARCH 302aBL and ARCH 402ab — 24 units — are changed to the professional electives requirement. The full degree requirements are described above.

Core Requirements

Students must complete the following core courses as a prelude to the upper division professional electives and degree requirements: ARCH 102aBL, ARCH 105L, ARCH 114, ARCH 202aBL, ARCH 211, ARCH 213ab, ARCH 214ab, and ARCH 370, MATH 108, PHYS 125L, and WRIT 140 or WRIT 130.

General Education Requirements

The university's general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. This program requires six courses, in different categories, plus writing and diversity requirements, which together comprise the USC Core. See pages xx and xx for more information. Students who are required to take MATH 108 during the freshman year may take their Social Issues course in the fall and WRIT 130 separately in the spring. Others will take WRIT 140 in the fall and will take Social Issues with it.

Bachelor of Landscape Architecture

The degree in landscape architecture provides the ability to critically examine and creatively respond to a wide array of environmental issues and purposes. New professionals must be equipped to take on the challenge of working in interdisciplinary fields, mediating between the goals and desires of diverse groups while soliciting their participation. Generating creative solutions for

forming a supportive and humane urban environment requires certain fundamental skills. This program encourages development of students' skills and abilities so that they can flourish in a professional setting:

- Knowledge of the physical world and the interrelationships between humans and the natural systems of which they are part.
- The ability to define the critical issues of places and sites through inventory, analysis and resolution of physical, social and cultural forces and meanings.
- The ability to use knowledge and experience to creatively respond to the problems that confront them and the dedication to understand great purpose and to take effective action.
- The ability to effectively communicate with peoples of diverse backgrounds through both words and images.
- The ability to interact collaboratively with individuals, community groups, public agencies or large corporations.
- Familiarity with new technologies, their impacts and their potential for the profession of landscape architecture and land planning.
- Awareness of the constant evolution of knowledge and a commitment to continually reexamine assumptions.

The Bachelor of Landscape Architecture is a four-year program of lectures, seminars and studio courses in conjunction with general education courses. Through academic research, personal participation and group endeavor, the program will introduce students to historic and contemporary issues in landscape architecture. Projects will concentrate on the design of spaces in the urban landscape. This emphasis derives from our location in Southern California, at the very heart of an exuberant and dynamic metropolitan area.

Each semester, the design studio will be paired with courses that develop technical skills, expand the students' working knowledge of plant materials and natural systems, and explore the history and theory of design. A component of each studio project will be team-oriented to develop the ability to work collectively.

Curriculum

FIRST YEAR, FIRST SEMESTER		UNITS
ARCH 102aL	Architectural Design I	4
ARCH 105L	Fundamentals of Design Communication	2
ARCH 114	Architecture: Culture and Community	2
General Education*	Social Issues	4
WRIT 140*	Writing and Critical Reasoning	4
		16

*Taken concurrently

FIRST YEAR, SECOND SEMESTER		UNITS
ARCH 102bL	Architectural Design I	4
ARCH 211	Materials and Methods of Building Construction	3
General Education		8
		15

SECOND YEAR, FIRST SEMESTER		UNITS
ARCH 202aL	Architectural Design II	6
ARCH 304x	Intensive Survey: Pre-History to the Present	4
ARCH 361L	Ecological Factors in Design	3
General Education		4
		17

SECOND YEAR, SECOND SEMESTER		UNITS
ARCH 260L	Landscape Architecture Design I	6
ARCH 362	Landscape Architecture Construction	3
ARCH 363	Plant Material Identification: Horticulture	4
ARCH 465	History of Landscape Architecture	4
		17

THIRD YEAR, FIRST SEMESTER		UNITS
ARCH 360aL	Landscape Architecture Design II	6
ARCH 364	Materials and Methods of Landscape Architecture	3
GEOG 345	Conservation of Natural Resources	4
WRIT 340	Advanced Writing	4
		17

THIRD YEAR, SECOND SEMESTER		UNITS
ARCH 207	Computer Applications in Architecture	2
ARCH 360bL	Landscape Architecture Design II	6
ARCH 463	Plant Material Identification: California Plant Communities	4
General Education		4
		16

FOURTH YEAR, FIRST SEMESTER		UNITS
ARCH 460L	Landscape Planning Studio	6
ARCH 466	Nature Landscapes and Gardens in Non-Western Cultures	4
PPD 100	Los Angeles, The Enduring Pueblo	4
General Education		4
		18

FOURTH YEAR, SECOND SEMESTER		UNITS
ARCH 461L	Landscape Architecture Comprehensive Project	6
ARCH 525	Professional Practice: Pre-Design, Project and Office Administration	3
Electives		5
		14
Total units required:		130

Minors in Architecture

Minor in Architecture

The minor in architecture provides the flexibility of complementing a student's major with an area of specialization. Taking a minor in architecture is a unique

opportunity for a student to stimulate his or her imagination and learn creative approaches to problem solving.

Admission Requirements

Students in good academic standing who have completed the freshman year are eligible.

Course Requirements

The requirements for the minor include three required courses (8 units) and a minimum of 12 units of upper division courses.

REQUIRED COURSES		UNITS
ARCH 106x	Workshop in Architecture	2
ARCH 114	Architecture: Culture and Community	2
ARCH 304x	Intensive Survey: Prehistory to the Present	4

Students may elect to take the upper division courses in an area of specialization, such as architectural history and theory, historic preservation, computers and design, visual communication, landscape architecture, public places — urban spaces, housing or practice management. This minor is not available to architecture majors.

Minor in Landscape Architecture

The minor is intended to help students understand the role of landscape architecture as a means for the integration of natural systems and landscapes with cultural values and purposes. Studies about natural resources and their importance in the built environment are joined with studies of the art of the garden. Landscape design, literature, music, painting and sculpture will be presented as it relates to physical settings, patterns of inhabitation and cultural rituals and meanings. This is an excellent emphasis for students in environmental studies, civil engineering, planning and anthropology. This minor is not available to architecture majors.

Admission Requirements

Students in good academic standing who have completed the freshman year are eligible.

Course Requirements

The minor in landscape architecture consists of three required courses (9 units) and a minimum of 14 units of upper division courses.

REQUIRED COURSES		UNITS
ARCH 106x	Workshop in Architecture	2
ARCH 361L	Ecological Factors in Design	3
ARCH 465	History of Landscape Architecture (Western Tradition)	4

UPPER DIVISION COURSES (14 UNITS)		UNITS
ARCH 363	Plant Material Identification: Horticulture	4
ARCH 364	Materials and Methods of Landscape Architecture	3
ARCH 432	People, Places and Culture: Architecture of the Public Realm	4

ARCH 466	Nature, Landscape and Gardens in Non-Western Cultures	4	engage and challenge European traditional and modernist orthodoxies.
ARCH 499	Special Topics	2-4	Barcelona is both a modern and historical site, beginning as a small Roman colony from the time of Augustus, and surviving Visigothic, Moorish and Frankish invasions. Its political and economic history has shaped the city, with the most forceful expression of its national aspiration occurring in the 19th century, the time most associated with the architect Antonio Gaudí. It is a city committed to a culture of visual design that has realized many ambitious urban plans, growing from its commitment to representing national pride. It is a dynamic site for the study of ancient and contemporary urbanism as it has achieved world-class status among cities as a locus for new world architecture. The program will combine field work, precedent analysis and discussions with the broader design community in Barcelona.
ARCH 532	Elements of the Urban Landscape	2	
ARCH 533	Urban Landscape Case Studies	2	
ARCH 536	The Landscape Planning Process	3	
ARCH 561	Urbanism Themes and Case Studies	2	
ARCH 563	Architecture in the Urban Landscape: Comparative Theories	2	

Non-architecture students must obtain written approval from their academic unit in order to take a 500-level course. For more information, call (213) 740-2090.

Global Programs and Other Enrichment Opportunities

Each year, a set of different global programs are offered to our fourth-year undergraduate students during their topic studio semesters. There are typically one to two programs offered each semester (fall, spring and summer), with recent locations being in Italy, China, Malaysia, France and Spain.

Each offering consists of a coordinated 15-unit, full semester program which includes a studio course in design and several required seminars in history and theory; technology; and cultural studies. Students must be in good academic standing to be considered and to participate.

Some examples of recent programs include:

Spring Program in Italy: Milan-Como

For many years, selected students have been able to participate in the Anthony A. Marnell II Italian Architecture Studies Program, located in Milan, a city at the forefront of Italian modern architecture and the center of Italian design. Students are housed and have classroom and studio space in Como, a small and pleasant lakeside town about 30 miles from Milan. The Milan-Como Program is one of only two U.S. school of architecture programs in this part of Italy. Strong relationships are fostered with the place, its people and its culture. Visits are planned within Italy and throughout Europe to expose the students to the full range of historical and contemporary architecture.

Fall Program in Spain: Barcelona

The School of Architecture's study abroad program in Barcelona provides a place for 16 to 20 fourth- and fifth-year architecture students in a course of study in urbanism and architecture of the city. The goal is to provide a broad overview of that city's major urban and architectural sites, topography and systems of urban organization. Students will be immersed in the issues of urban design and architecture that have shaped the city, and will develop critical thinking and methodologies of analysis by designing in the urban context. The course of study will examine this fascinating culture that is committed to design and architectural practices that

engage and challenge European traditional and modernist orthodoxies.

Barcelona is both a modern and historical site, beginning as a small Roman colony from the time of Augustus, and surviving Visigothic, Moorish and Frankish invasions. Its political and economic history has shaped the city, with the most forceful expression of its national aspiration occurring in the 19th century, the time most associated with the architect Antonio Gaudí. It is a city committed to a culture of visual design that has realized many ambitious urban plans, growing from its commitment to representing national pride. It is a dynamic site for the study of ancient and contemporary urbanism as it has achieved world-class status among cities as a locus for new world architecture. The program will combine field work, precedent analysis and discussions with the broader design community in Barcelona.

Examples of public space and architecture from antiquity to the 21st century will be studied as part of the context of a city that has successfully projected its future without neglecting its past and present. Visits are planned within Spain and throughout Europe to expose students to the full range of historical and contemporary architecture.

Fall Program in Asia: Emphasis on China and Urbanism

The Asia Architecture and Urbanism program provides participating students the opportunity to engage and comprehend the full depth and global ramifications of the rapid changes that are taking place in China and other cities in Asia. The complex and multiple factors that inform urbanism and define the built environment will be explored and analyzed both in terms of historical cultural source and contemporary manifestation. Participants in these academic engagements will include regional as well as international professionals, academics, historians, economists and local inhabitants through direct engagements required of the course curriculum. Students will bring this knowledge and point of view back to the school after their semester away to expand the discussion of urbanism to the larger community of students and faculty at the School of Architecture.

Summer Semester in Asia: Emphasis on Southeast Asia and Development

The School of Architecture offers a summer program, established in 1988, based at the Universiti Malaya, which includes travel throughout Asia before arriving at Kuala Lumpur at the mid-term point. USC students work on a studio project in collaboration with students from the School of Architecture at the Universiti Malaya as part of a full 15-unit, five-course curriculum.

The purpose of this program is to offer students the opportunity to:

- work on a real project in a country where development is a prime goal of the government and where opportunities for architecture students to complete internships and gain employment after graduation are expanding;
- work with the physical requirements, governmental regulations and economic situations that affect the design of projects that can be realized;
- become familiar with local practitioners in order to learn about architectural practice in these areas; and

- expand appreciation of the importance of Asian development in the current world market and show practitioners USC graduates' ability to contribute to development in Asia.

Summer Graduate Studies Abroad

The School of Architecture offers programs for summer graduate study abroad. The purpose of the programs is to offer graduate architecture students the opportunity to study the built fabric of another culture firsthand and engage in a focused urban studies problem in that culture. The programs also strive to expand appreciation of the importance of development in the current world market and show practitioners USC graduates' ability to engage in and contribute to international development.

Exhibits of Student Work

Throughout the year, selected students are given the opportunity to show work in organized exhibitions, as well as to be included in our ongoing student work publication *IDWKS*. The school seeks multiple formats and opportunities to have student work shown in the community at large and at cultural institutions throughout the city and the world, with recent exhibits in Shanghai, France, Italy and Washington, DC. The school uses new technologies whenever possible, including real-time video streams and YouTube, to share the accomplishments and new ideas of our students off campus and outside of the traditional classroom limits. Students provide such work voluntarily and at their own risk. Work that is lost, damaged or stolen is not the responsibility of the school.

Field Trips

Many field trips are organized each year in support of various aspects of the academic program. During the past several years, students have made trips to locations in the larger California region (such as San Francisco, La Jolla to see the Salk Institute and Catalina Island) as well as throughout the United States, including New Orleans and other important cities. In addition, students regularly visit the many sites of significance in the local Los Angeles area on an almost weekly basis for their general course work and personal interest.

Lectures and Exhibitions

The school provides significant service to the community and profession through public programs, and the participation of faculty members in community and professional activities. With the support and cooperation of the Architectural Guild, the school generates a vigorous program of lectures, exhibitions and tours.

Some of the world's most distinguished and emerging architects, landscape architects and designers have lectured at USC. These include Frank Gehry, Mario Botta, Yona Friedman, Peter Cook, Yung Ho Chang, Thom Mayne, Michael Maltzan, Hitoshi Abe, Mia Lehrer, Fumihiko Maki, Jean Nouvel, Will Bruder, Francois Roche, Enrique Norten, Adriaan Geuze, Kazuyo Sejima, Ai Wei Wei, Rem Koolhaas, Shigeru Ban, Hans Hollein, Charles Waldheim, Nader Tehrani, Cesar Pelli, Javier Sanchez, Laurie Olin, Eric Owen Moss and Pei Zhu.

The school also provides the Helen Lindhurst Architecture Gallery for major architectural exhibitions. Recent shows have included important international architects such as Christoph Kapeller, Renzo Piano,

Santiago Calatrava, Herman Hertzberger and Alvaro Siza, as well as USC faculty, students and alumni.

Other Programs

Exploration of Architecture Summer Program for High School Students

The School of Architecture offers two- and four-week programs for high school students (must have completed ninth grade by the start of the program) who have no previous experience but are interested in architecture. The program, which began in 1983, is particularly rewarding for students who are contemplating a career in architecture. However, all students find the exposure to the unique problem-solving methodologies of architecture a benefit regardless of their final career choice. Living on campus in a USC residence hall, high school students experience what it is like to be a university student. They participate in studio classes with

professional critics and present their ideas in reviews attended by parents and friends.

The program also exposes them, through case studies, sketching exercises and field trips, to some of the most dramatic and impressive historical and modern architecture of Los Angeles. International students have especially appreciated the opportunity to pursue this summer program of study that is not highly dependent on English language skills. Limited financial assistance is available.

Obtain program details by visiting the School of Architecture Website or by calling (800) 281-8616.

Summer Program in Heritage Conservation

This program offers 15 days of classes with noted experts from Southern California and the United States. Taken together the courses act as a general introduction to the field of heritage conservation. In addition to examining the history and philosophy of the conservation

movement as it has evolved during the past century, lectures and field trips to historic sites throughout the Los Angeles area will introduce students to a broad range of legal, economic, aesthetic and technical issues associated with the documentation, conservation and interpretation of historic structures, landscapes and communities.

For more information, call (213) 821-2168.

The Building Science Program in Civil Engineering

The Sonny Astani Department of Civil Engineering offers an undergraduate program leading to the degree of Bachelor of Science in Civil Engineering, with an emphasis in building science. The curriculum includes most of the work which is required for the major in structures, plus 30 units in architectural studies offered by the School of Architecture. See the USC Viterbi School of Engineering, Civil Engineering, section of this catalogue, page xx, for further information.

Graduate Programs

The school offers interrelated graduate programs in architecture, landscape architecture, building science and historic preservation as well as two dual degree programs with the USC Price School of Public Policy.

Admission to Graduate Programs

Credentials for admission must include a complete record of all previous college or university work. The applicant must request the registrar of each college or university attended to forward official transcripts of record directly to the Office of Admission.

Following are the basic requirements for admission to the graduate programs: (1) the appropriate degree from an accredited college or university; (2) satisfactory scores on the verbal, analytical and quantitative portions of the aptitude test of the Graduate Record Examinations; (3) intellectual promise and clear study intentions that indicate an ability to do acceptable graduate work; (4) a portfolio of design work*; (5) strong personal qualifications.

All students must speak and write English. Foreign students must demonstrate such ability by taking the TOEFL or IELTS test before leaving their home countries, and, if necessary, by further tests upon arrival on campus.

International students may be required to enroll in American Language Institute (ALI) English courses, based on scores on the English Placement Tests. The cost of these additional courses is the responsibility of the student. In addition, international students should be aware that they may have to defer enrollment in some major courses because of the ALI courses, extending the number of semesters required to complete the program and increasing the overall tuition expense. International students are urged to read with care all information sent to them about English requirements and to take as many English language courses as possible prior to coming to the United States.

**The Master of Building Science and Master of Heritage Conservation programs accept computer programs, papers and other work as portfolio work.*

Correspondence with the dean or individual faculty members does not constitute admission to the Graduate School or to the School of Architecture. Only a letter from the Director of Admissions grants official admission.

Graduate Program Policies

Graduate students are expected to complete between 12 and 16 units per semester, spring and fall, depending on the program in which they are enrolled.

A minimum grade of C (2.0) is required in a course to receive graduate credit. A grade point average of at least B (3.0) on all units attempted at USC toward a graduate degree is required for graduation. A total grade point average of at least a B (3.0) in all courses applied toward completion of a certificate is required prior to being awarded a particular certificate. Course work taken on a pass/no pass basis cannot be applied toward a graduate degree or a certificate. If a student does not meet these minimum grades the faculty member should meet with the student to provide timely advisory reviews.

Failure to complete program course work on schedule will result in the loss of financial awards from the School of Architecture and/or may result in suspension from the program upon recommendation from the program director and approval by the Dean of the School of Architecture and the Associate Vice Provost for Graduate Programs. Additional semesters may be taken to complete the thesis or directed design research when appropriate.

All appeals will be reviewed initially by the director(s) of the appropriate graduate program and then by a committee consisting of all graduate program directors (with the exception that design courses will be reviewed by the design review committee). Their recommendation(s) will be forwarded to the dean for consideration and action, and then forwarded to the Associate Vice Provost for Graduate Programs. All communications must be in writing.

Certificate in Architecture

The focus of this program is on understanding the broad and complex role of architecture within the urban context. Studies focus on cities throughout the world where conditions of increasing density, environmental challenges and cultural complexity require design initiatives that support amenity, sustainability and cultural meaning. The certificate is open to graduate students not pursuing a Master of Architecture degree.

Course Requirements

Completion of the certificate program requires a minimum of 16 units.

For current USC graduate students not enrolled in a master's degree program in the School of Architecture

CORE COURSES		UNITS
ARCH 553*	History of American Architecture and Urbanism	3
ARCH 561	Urbanism Themes and Case Studies	2
ARCH 562	Architecture Themes and Case Studies	2
ARCH 563	Contemporary Architectural Theory	2
Electives		7
SAMPLE ELECTIVES (OR AS APPROVED BY PROGRAM FACULTY ADVISER OR DIRECTOR)		UNITS
ARCH 514	Contemporary Issues in Architecture: A Critical Dialectic	3
ARCH 515L	Seminar: Advanced Environmental Systems	4
ARCH 519	Sustainability in the Environment: Infrastructures, Urban Landscapes, and Buildings	3
ARCH 550	Heritage Conservation Policy and Planning	3
ARCH 564	Descriptive and Computational Architectural Geometry	2
ARCH 606	Advanced Architectural Theory	2

ARCH 607	Advanced Computation	2
ARCH 608	Urban Theory: Los Angeles Case Study	2
ARCH 609	Advanced Fabrication	2
ARCH 611	Advanced Building Systems Integration	4

Students from outside the School of Architecture are required to take ARCH 543 Research Methods (1) as one of their 16 units.

**Students in the Master of Heritage Conservation Program should substitute core class ARCH 553 with another elective.*

Certificate in Building Science

Building science at USC recognizes that exemplary architecture requires a creative response to natural forces, based on informed good judgment in the areas of architectural technology. The Certificate in Building Science is intended as a supplement for students enrolled in graduate course work in architecture, landscape architecture, historic preservation, urban planning or related disciplines.

Course Requirements

Completion of the certificate requires a minimum of 16 units. Students must take three core courses. Electives in building science may be taken to complete the program requirements.

REQUIRED COURSES		UNITS
Choose three of the following six courses:		
ARCH 511	Building Systems, or	
ARCH 611	Advanced Building Systems Integration	4
ARCH 513L	Seminar: Advanced Structures, or	
ARCH 613L	Seminar: Structures Research	4
ARCH 515L	Seminar: Advanced Environmental Systems, or	
ARCH 615L	Seminar: Environmental Systems Research	4
Elective(s) in Building Science		4

SAMPLE ELECTIVES (OR AS APPROVED BY PROGRAM FACULTY ADVISER OR DIRECTOR)		UNITS
ARCH 507	Theories of Computer Technology	3
ARCH 517	Current Topics in Building Science	1, max 6
ARCH 519	Sustainability in the Environment: Infrastructures, Urban Landscapes, and Buildings	3
ARCH 573	Seismic Design	2
ARCH 577L	Lighting Design	4

One from the list of required courses that was not yet selected

Note: Required courses for this certificate cannot also be required courses in the student's major in the School of Architecture.

Certificate in Heritage Conservation

This program is directed at professionals who wish to augment their academic credential for their involvement in heritage conservation projects and at graduate

students who wish to complement a degree in architecture, landscape architecture, planning, public art administration, geography, anthropology or other related disciplines.

REQUIRED COURSES (16 UNITS)

ARCH 549	Fundamentals of Heritage Conservation	3
ARCH 550	Heritage Conservation Policy and Planning	3
ARCH 551	Conservation Methods and Materials	3
ARCH 553	History of American Architecture and Urbanism	3
Electives*		4

SAMPLE ELECTIVES (OR AS APPROVED BY

PROGRAM FACULTY ADVISER OR DIRECTOR)		UNITS
ARCH 554	Heritage Conservation Practicum — Advanced Documentation	3
ARCH 556	Readings in Heritage Conservation Theory	2

**Students from outside the School of Architecture are required to take ARCH 543 Research Methods as one of their 16 units.*

Certificate in Landscape Architecture

This program is intended to introduce at the graduate level the basic subjects inherent to the field of landscape architecture: plant materials suitable to urban conditions; urban utility and transportation systems in relation to topography, natural drainage and pathways; plant and wildlife communities; as well as inquiries about landscape infrastructure and ecology, and the history of human settlement in the evolution of urban landscapes. Southern California and Los Angeles provide an exceptionally valuable natural and socio-cultural laboratory for landscape architecture studies.

Course Requirements

Completion of the certificate program requires a minimum of 16 units. Students must take four core courses and select 3 units of electives from the approved list approved by the director of the graduate landscape architecture program.

REQUIRED COURSES		UNITS
ARCH 531	The Natural Landscape	3
ARCH 537L	Urban Plant Ecology: Environmental Perspectives	4
ARCH 544	Urban Landscape: Process and Place	3
ARCH 565	Global History of Landscape Architecture	3
Electives*		3

SAMPLE ELECTIVES (OR AS APPROVED BY

PROGRAM FACULTY ADVISER OR DIRECTOR)		UNITS
ARCH 530	Landscape Architecture Practice	3
ARCH 534	Landscape Construction: Topographic Design	3
ARCH 535	Landscape Construction: Performance Approaches	3
ARCH 536	Landscape Planning Process	3

ARCH 538L	Urban Plant Ecology: Cultural Perspectives	4
ARCH 545	Urban Landscape: Contemporary History and Prospect	3
ARCH 566	Cross-Cultural Topics in Landscape Architecture History	3

**Students from outside the School of Architecture are required to take ARCH 543 Research Methods (1) as one of their 16 units.*

Sustainable Cities Graduate Certificate

This multidisciplinary certificate program is open to USC students pursuing graduate degrees in disciplines including anthropology, architecture, biology, chemistry, communication, earth sciences, economics, education, engineering, geography, international relations, political science, public policy, sociology, urban planning and others. See the USC Price School of Public Policy, page xx, for course requirements.

Master of Architecture

Programs

Two Master of Architecture programs are offered: the "+2" track in Architecture for students with pre-professional architecture degrees, and a post-professional program for students who already hold a professional Bachelor of Architecture or its equivalent.

Master of Architecture +2 Program

Admitted students must have a four-year architectural studies degree from: a U.S. school with an accredited professional architecture program; a U.S. school that is accredited by a regional accrediting body, without an accredited professional architecture program; or an international program that is deemed equivalent. A minimum of four semesters of Architectural Design Studio, five of the Basic Studies course equivalents from the list outlined below (or approximately 15 units), and 40 units of non-architectural course work must be completed in the previous degree. All students must matriculate in the fall semester and be in residence for a minimum of two years (four semesters).

Degree Requirements

To meet NAAB accreditation requirements, all graduates must complete a combined total of 168 credit hours of study at the undergraduate and graduate level, of which at least 30 semester credit hours must be at the graduate level as well as a minimum of 45 units of non-architectural content. Master's students must meet established standards for graduate study at USC, and complete a total of 64 credit units, which may include Basic Studies not completed at the undergraduate level, 33 units of Advanced Studies as well as approved electives.

(1) Basic Studies (the following may be met by an equivalent course taken in an undergraduate program or as a Basic Studies requirement at USC): ARCH 213ab Building Structures and Seismic Design, ARCH 214ab World History of Architecture, ARCH 215 Design for the Thermal and Atmospheric Environment, ARCH 313 Design of Building Structures, ARCH 315 Design for the Luminous and Sonic Environment, ARCH 410 Computer

Transformations, ARCH 511L Building Systems, ARCH 514 Contemporary Issues in Architecture: A Critical Dialectic, ARCH 525 Professional Practice: Pre-Design, Project and Office Administration, ARCH 526 Professional Practice: Legal Economic Context Project Documentation, and ARCH 611 Advanced Building Systems Integration.

If a student has completed the equivalent of the ARCH 213ab Building Structures and Seismic Design, ARCH 313 Design of Building Structures sequence in his or her undergraduate studies, yet this work did not include Seismic Design, the student must then take ARCH 313 for its seismic content or ARCH 573 Seismic Design, if offered.

(2) Advanced Studies courses include: ARCH 505abL Graduate Architecture Design, ARCH 543 Research Methods, ARCH 561 Urbanism Themes and Case Studies, ARCH 562 Architecture Themes and Case Studies, ARCH 563 Contemporary Architectural Theory, ARCH 564 Descriptive and Computational Architectural Geometry, and ARCH 605abL Graduate Architecture Design.

(3) Electives: courses may be taken at the 400, 500 or 600 level. If the total 45 units of non-architectural content, as required by NAAB, have not been completed during undergraduate studies, students will be expected to take those units during the course of the Master of Architecture +2 program.

Thesis or Directed Design Research Option

M.Arch. +2 students may elect to complete an independent thesis or a directed design research project (DDR). An independent thesis or DDR option will allow students to substitute ARCH 693abL or ARCH 695abL for 10 credit units of electives. This option requires residency of a minimum of five instead of four semesters.

Sample Curriculum

FIRST YEAR, FIRST SEMESTER		UNITS
ARCH 505aL	Graduate Architecture Design	6
ARCH 543	Research Methods	1
ARCH 561	Urbanism Themes and Case Studies	2
ARCH 562	Architecture Themes and Case Studies	2
Basic Studies or Electives		5
		16

FIRST YEAR, SECOND SEMESTER		UNITS
ARCH 505bL	Graduate Architecture Design	6
ARCH 563	Contemporary Architectural Theory	2
ARCH 564	Descriptive and Computational Architectural Geometry	2
Basic Studies or Electives		6
		16

SECOND YEAR, FIRST SEMESTER		UNITS
ARCH 605aL	Graduate Architecture Design	6
Basic Studies or Electives		10
		16

SECOND YEAR, SECOND SEMESTER		UNITS
ARCH 605bL	Graduate Architecture Design	6
Basic Studies or Electives*		10
		16

OPTIONAL THIRD YEAR, FIRST SEMESTER

ARCH 693bL** M.Arch. Thesis, Option I, or
 ARCH 695bL** M.Arch. Thesis, Option II 8
**Students electing the independent thesis/DDR option should take ARCH 693a or ARCH 695a at this time.*
***For students who have elected the independent study option.*

Master of Architecture: Post-Professional

Candidates for admission must have a five-year Bachelor of Architecture degree or its equivalent. Completion of the degree requires 49 units, including 23 units of required courses, 10 units of thesis or directed design research, and 16 units of approved electives.

The required courses are ARCH 410 Computer Transformations; ARCH 543 Research Methods; ARCH 605abL Graduate Architecture Design; ARCH 606 Advanced Architectural Theory; ARCH 607 Advanced Computation; ARCH 608 Urban Theory: Los Angeles Case Study; ARCH 609 Advanced Fabrication; ARCH 693abL M.Arch. Thesis, Option I.

Thesis or Directed Research Option

As a completion to this post-professional degree, students are provided the option to choose between an independent written thesis (ARCH 695abL M.Arch. Thesis, Option II) or a directed design research project (ARCH 693abL M.Arch. Thesis, Option I).

49-Unit Sample Curriculum

FIRST YEAR, FIRST SEMESTER		UNITS
ARCH 410	Computer Transformations	2
ARCH 543	Research Methods	1
ARCH 605aL	Graduate Architecture Design	6
ARCH 606*	Advanced Architectural Theory	2
ARCH 607*	Advanced Computation	2
ARCH 608*	Urban Theory: Los Angeles Case Study	2
ARCH 609*	Advanced Fabrication	2
		17

FIRST YEAR, SECOND SEMESTER		UNITS
ARCH 605bL	Graduate Architecture Design	6
ARCH 693aL	M.Arch. Thesis, Option I, or	
ARCH 695aL	M.Arch. Thesis, Option II	2
Elective		8
		16

SECOND YEAR, FIRST SEMESTER		UNITS
ARCH 693bL	M.Arch. Thesis, Option I, or	
ARCH 695bL	M.Arch. Thesis, Option II	8
Electives		8
		16

**ARCH 606 and ARCH 607 will be taken the first eight weeks of the semester and ARCH 608 and ARCH 609 in the latter half of the semester.*

Advanced Standing

Students may apply for advanced standing based on their general qualifications and any unusual strengths or experience. Applicants who have completed a five-year Bachelor of Architecture degree and at least five years of teaching or practice (or a combination of) may be qualified for advanced standing. Each student will

be considered individually. Qualified students will be admitted to a two-semester program at the time of review for admission. Students with advanced standing must complete 33 units including 15 units of required courses, 10 units of thesis or directed design research, and 8 units of approved electives.

The required courses are ARCH 543 Research Methods; ARCH 605aL Graduate Architecture Design; ARCH 606 Advanced Architectural Theory; ARCH 607 Advanced Computation; ARCH 608 Urban Theory: Los Angeles Case Study; and ARCH 609 Advanced Fabrication; ARCH 693abL M.Arch. Thesis, Option I, or ARCH 695abL M.Arch. Thesis, Option II.

33-Unit Advanced Standing Sample Curriculum

FIRST YEAR, FIRST SEMESTER		UNITS
ARCH 543	Research Methods	1
ARCH 605aL	Graduate Architecture Design	6
ARCH 606*	Advanced Architectural Theory	2
ARCH 607*	Advanced Computation	2
ARCH 608*	Urban Theory: Los Angeles Case Study	2
ARCH 609*	Advanced Fabrication	2
ARCH 693aL	M.Arch. Thesis, Option I, or	
ARCH 695aL	M.Arch. Thesis, Option II	2
		17

FIRST YEAR, SECOND SEMESTER		UNITS
ARCH 693bL	M.Arch. Thesis, Option I, or	
ARCH 695bL	M.Arch. Thesis, Option II	8
Elective		8
		16

**ARCH 606 and ARCH 607 will be taken the first eight weeks of the semester and ARCH 608 and ARCH 609 in the latter half of the semester.*

Master of Landscape Architecture

USC offers an international laboratory for the study of place in an extraordinary natural landscape, at the center of an unparalleled multicultural region, within the context of a great urban university. Thus, the study of landscape architecture at USC has a particular focus on urban place-making in relation to three principles.

First, the programs are intended for students who already have earned a first degree or the equivalent in landscape architecture or architecture, as well as students entering design studies after obtaining a degree in another field. The emphasis is on truly advanced study based on the knowledge and skills to engage complex issues and to undertake ambitious explorations. Graduates are prepared for leadership opportunities in professional practice as well as in higher education.

A second emphasis is on urban landscapes, and on the responsibility of design professions to create the qualities and meanings of our urban futures and to make critical contributions to the reclamation of degraded natural systems and places.

Third, place-making is a collaborative responsibility that requires leadership from professionals across the entire domain of planning and design. This requires seamless relationships between programs, students and faculty engaged in architecture, landscape

architecture, heritage conservation, building science and planning studies.

Admission with No Previous Professional Education (+3)

Individuals who have completed a four-year Bachelor of Arts or Bachelor of Science degree, or its equivalent, with no prior degree in landscape architecture, architecture or environmental design, are eligible for admission to the program. Preference for admission is given to those who have completed a balanced undergraduate education that includes study in the arts, sciences and humanities. Applicants must document successful completion of a college-level course in the natural sciences. Preparation in the visual arts is strongly encouraged. A minimum of a one-semester, college-level course in the visual arts, such as drawing, sculpture, graphics and/or basic design, is required before beginning the first semester of study. Courses in the humanities, ecology, history of art, landscape architecture and architecture are strongly encouraged, although not required.

96-Unit Curriculum +3

Students admitted with no previous professional education must complete 96 units, including 68 units of specified courses, 18 units of electives of which a minimum of 14 must be from the School of Architecture, and 10 units of Thesis Option I or II. Electives must be part of a curricular plan approved by the program director.

Sample Curriculum +3 (for students with no previous professional education)

YEAR ONE, SEMESTER ONE		UNITS
ARCH 537L	Urban Plant Ecology: Environmental Perspectives	4
ARCH 539L	Media for Landscape Architecture	2
ARCH 541aL	Landscape Architecture Design	6
ARCH 565	Global History of Landscape Architecture	3
		15

YEAR ONE, SEMESTER TWO		UNITS
ARCH 534	Landscape Construction: Topographic Design	3
ARCH 538L	Urban Plant Ecology: Cultural Perspectives	4
ARCH 541bL	Landscape Architecture Design	6
ARCH 548	Media for Landscape Architecture: 3D Design	3
Electives		1
		17

YEAR TWO, SEMESTER ONE		UNITS
ARCH 531	The Natural Landscape	3
ARCH 535	Landscape Construction: Performance Approaches	3
ARCH 542aL	Landscape Architecture Design	6
ARCH 543	Research Methods	1
ARCH 544	Urban Landscape: Process and Place	3
		16

YEAR TWO, SEMESTER TWO		UNITS
ARCH 542bL	Landscape Architecture Design	6
ARCH 545	Urban Landscape: Contemporary History and Prospect	3
ARCH 635	Landscape Construction: Assembly and Documentation	3
Electives		4
		16

YEAR THREE, SEMESTER ONE		UNITS
ARCH 530	Landscape Architecture Practice	3
ARCH 642L	Landscape Architecture Design	6
ARCH 697aL	M.L.Arch. Thesis Option II, or	
ARCH 698aL	M.L.Arch. Thesis Option I	2
Electives		5
		16

YEAR THREE, SEMESTER TWO		UNITS
ARCH 697bL	M.L.Arch. Thesis Option II, or	
ARCH 698bL	M.L.Arch. Thesis Option I	8
Electives		8
		16

Admission with Advanced Placement (+2)

Applicants who have completed a non-accredited, pre-professional undergraduate degree in architecture, landscape architecture or environmental design may be granted advanced placement of one or two semesters, subject to the review of the admission committee. Applicants granted advanced placement may be able to waive certain course requirements for the MLA program by demonstrating equivalencies in any of the required courses. The program director and faculty in charge of the specific curriculum areas will determine the studio and professional course requirements for each MLA student admitted with advanced placement. The following courses are prerequisites to be completed prior to matriculation or, on specific notice, in the first year of the program: history of landscape architecture (ARCH 565 or equivalent), landscape architecture construction (ARCH 534, ARCH 535 or equivalent), plant materials (ARCH 537L, ARCH 538L or equivalent), media (ARCH 548 or equivalent).

64-Unit Curriculum +2

Advanced placement students must complete 64 units, including 37 units of specified courses, 17 units of electives of which a minimum of 12 must be from the School of Architecture, and 10 units of Thesis Option I or II. Electives must be part of a curricular plan approved by the program director.

Sample Curriculum +2 (for advanced placement students admitted with pre-professional design degrees)

YEAR ONE, SEMESTER ONE		UNITS
ARCH 542aL	Landscape Architecture Design	6
ARCH 543	Research Methods	1
ARCH 544	Urban Landscape: Process and Place	3

ARCH 565	Global History of Landscape Architecture	3
Electives		3
		16

YEAR ONE, SEMESTER TWO		UNITS
ARCH 542bL	Landscape Architecture Design	6
ARCH 545	Urban Landscape: Contemporary History and Prospect	3
ARCH 548	Media for Landscape Architecture: 3D Design	3
Electives		4
		16

YEAR TWO, SEMESTER ONE		UNITS
ARCH 530	Landscape Architecture Practice	3
ARCH 531	The Natural Landscape	3
ARCH 642L	Landscape Architecture Design	6
ARCH 697aL	M.L.Arch. Thesis Option II, or	
ARCH 698aL	M.L.Arch. Thesis Option I	2
Electives		2
		16

YEAR TWO, SEMESTER TWO		UNITS
ARCH 697bL	M.L.Arch. Thesis Option II, or	
ARCH 698bL	M.L.Arch. Thesis Option I	8
Electives		8
		16

Admission with a First Professional Degree in Landscape Architecture: Advanced Standing (+1.5)

Students who hold an accredited Bachelor of Landscape Architecture degree or the equivalent may be granted advanced standing in a post-professional 48-unit, three-semester sequence of studies.

48-Unit Curriculum +1.5

Advanced standing students must complete 48 units, including 19 units of specified courses, 19 units of electives of which a minimum of 12 must be from the School of Architecture, and 10 units of Thesis Option I or II. Electives must be part of a curricular plan approved by the program director.

Sample Curriculum +1.5 (for advanced standing students admitted with a first professional degree in landscape architecture)

YEAR ONE, SEMESTER ONE		UNITS
ARCH 542aL	Landscape Architecture Design	6
ARCH 543	Research Methods	1
ARCH 544	Urban Landscape: Process and Place	3
Electives		6
		16

YEAR ONE, SEMESTER TWO		UNITS
ARCH 542bL	Landscape Architecture Design	6
ARCH 545	Urban Landscape: Contemporary History and Prospect	3

ARCH 697aL	M.L.Arch. Thesis Option II, or	
ARCH 698aL	M.L.Arch. Thesis Option I	2
Electives		5
		16

YEAR TWO, SEMESTER ONE		UNITS
ARCH 697bL	M.L.Arch. Thesis Option II, or	
ARCH 698bL	M.L.Arch. Thesis Option I	8
Electives		8
		16

Sample Elective Courses for All Curricula

ELECTIVES		UNITS
ARCH 404	Topics in Modern Architecture in Southern California	3
ARCH 407	Advanced Computer Applications	4
ARCH 440	Literature and the Urban Experience	4
ARCH 507	Theories of Computer Technology	3
ARCH 519	Sustainability in the Environment: Infrastructures, Urban Landscapes and Buildings	3
ARCH 524	Professional Practicum	1, max 2
ARCH 536	The Landscape Planning Process	3
ARCH 540L	Topics in Media for Landscape Architecture	2, max 6
ARCH 546	Topics in Landscape Architecture: Issues and Practices	3, max 6
ARCH 547	Urban Nature	3
ARCH 548	Media for Landscape Architecture: 3D Design	3
ARCH 549	Fundamentals of Heritage Conservation	3
ARCH 550	Heritage Conservation Policy and Planning	3
ARCH 552	Introduction to Historic Site Documentation	2
ARCH 553	History of American Architecture and Urbanism	3
ARCH 566	Cross-Cultural Topics in Landscape Architecture	
	History	3, max 6
ARCH 606	Advanced Architectural Theory	2
ARCH 608	Urban Theory: Los Angeles Case Study	2
ARCH 635	Landscape Construction: Assembly and Documentation	3
PPD 417	History of Planning and Development	4
PPD 461	Sustainable Communities, Policy and Planning	4
PPD 527	The Social Context of Planning	2
PPD 530	Historic Analysis of Urban Form and Planning Practice	2
PPD 533	Planning History and Urban Form	2
PPDE 632	Sustainable Cities	4
SSCI 581	Concepts for Spatial Thinking	4
SSCI 583	Spatial Analysis and Modeling	4

Thesis or Directed Research Option

In addition to the opportunity to initiate an independent written thesis, students are provided the option to undertake independent design research on important urban issues and projects already in progress within the School of Architecture. Whichever option is taken, students are supported in their work by a faculty advisory team including a principal critic.

Master of Heritage Conservation

Completion of this degree requires 48 units and includes 18 units of specified courses, 8 units of thesis preparation and thesis, and 22 units of elective courses as approved by the program director.

REQUIRED COURSES		UNITS
ARCH 404	Topics in Modern Architecture in Southern California	3
ARCH 543	Research Methods	1
ARCH 549	Fundamentals of Heritage Conservation	3
ARCH 550	Heritage Conservation Policy and Planning	3
ARCH 551	Conservation Methods and Materials	3
ARCH 552	Introduction to Historic Site Documentation	2
ARCH 553	History of American Architecture and Urbanism	3
ARCH 691abz	Heritage Conservation Thesis Preparation and Thesis	2-6-0

48-Unit Sample Curriculum

FIRST YEAR, FIRST SEMESTER		UNITS
ARCH 543	Research Methods	1
ARCH 549	Fundamentals of Heritage Conservation	3
ARCH 552	Introduction to Historic Site Documentation	2
ARCH 553	History of American Architecture and Urbanism	3
Electives		3
		12

FIRST YEAR, SECOND SEMESTER

		UNITS
ARCH 550	Heritage Conservation Policy and Planning	3
ARCH 551	Conservation Methods and Materials	3
ARCH 691a	Heritage Conservation Thesis Preparation and Thesis	2
Electives		4
		12

SECOND YEAR, FIRST SEMESTER

		UNITS
Electives		12
		12

SECOND YEAR, SECOND SEMESTER

		UNITS
ARCH 404	Topics in Modern Architecture in Southern California	3

ARCH 691b	Heritage Conservation Thesis Preparation and Thesis	6
Electives		3
		12

Requirements for Advanced Standing

Students must have one of the following: an accredited graduate certificate in historic preservation or heritage conservation; professional degree or professional registration in architecture or engineering; graduate degree in a related field, such as architectural history, planning or history; and at least five years of teaching or practice (may be combined). Each student will be considered individually. Qualified students will be admitted to a three-semester program at the time of review of admission. Students with advanced standing must complete 36 units.

REQUIRED COURSES		UNITS
ARCH 404	Topics in Modern Architecture in Southern California	3
ARCH 543	Research Methods	1
ARCH 549	Fundamentals of Heritage Conservation	3
ARCH 550	Heritage Conservation Policy and Planning	3
ARCH 551	Conservation Methods and Materials	3
ARCH 552	Introduction to Historic Site Documentation	2
ARCH 553	History of American Architecture and Urbanism	3
ARCH 691abz	Heritage Conservation Thesis Preparation and Thesis	2-6-0

36-Unit Sample Curriculum

FIRST YEAR, FIRST SEMESTER		UNITS
ARCH 543	Research Methods	1
ARCH 549	Fundamentals of Heritage Conservation	3
ARCH 552	Introduction to Historic Site Documentation	2
ARCH 553	History of American Architecture and Urbanism	3
Electives		3
		12

FIRST YEAR, SECOND SEMESTER

		UNITS
ARCH 404	Topics in Modern Architecture in Southern California	3
ARCH 550	Heritage Conservation Policy and Planning	3
ARCH 551	Conservation Methods and Materials	3
ARCH 691a	Heritage Conservation Thesis Preparation and Thesis	2
		11

SECOND YEAR, FIRST SEMESTER

		UNITS
ARCH 691b	Heritage Conservation Thesis Preparation and Thesis	6
Electives		7
		13

Master of Building Science

Degree Requirements

Completion of this degree requires 48 units and includes 16 units of specified courses to include three core seminars and one research seminar; 17 units of elective courses; and 15 units of thesis and thesis preparation.

Core seminars are:

ARCH 511L	Building Systems, or	
ARCH 611	Advanced Building Systems Integration	4
ARCH 513L	Seminar: Advanced Structures	4
ARCH 515L	Seminar: Advanced Environmental Systems	4

Research seminars are:

ARCH 613L	Seminar: Structures Research, or	
ARCH 615L	Seminar: Environmental Systems Research	4

48-Unit Sample Curriculum

FIRST YEAR, FIRST SEMESTER	UNITS
Core seminar(s) and/or research seminar(s)	12
	12

FIRST YEAR, SECOND SEMESTER	UNITS
ARCH 596 Building Science Thesis Preparation	1
Core seminar and/or research seminar	4
Electives	7
	12

SECOND YEAR, FIRST SEMESTER	UNITS
ARCH 692aL Building Science Thesis	6
Electives	6
	12

SECOND YEAR, SECOND SEMESTER	UNITS
ARCH 692bL Building Science Thesis	8
Elective	4
	12

Advanced Standing for Students with a Five-Year Professional Degree in Architecture

Applicants who have completed a five-year Bachelor of Architecture degree and at least five years of teaching or practice (may be combined), may be qualified for advanced standing. Each student will be considered individually. In such cases, the degree requirements are 36 units, including 8 units of specified courses, 15 units of thesis and thesis preparation and 13 units of electives. Students with advanced standing will typically be able to complete the degree program in three regular semesters. Admission with advanced standing is determined at the time of review for admission to the program.

36-Unit Advanced Standing Sample Curriculum

FIRST YEAR, FIRST SEMESTER	UNITS
ARCH 511L Building Systems, or	
ARCH 611 Advanced Building Systems Integration	4
ARCH 513L Seminar: Advanced Structures	4

ARCH 515L	Seminar: Advanced Environmental Systems	4
ARCH 596	Building Science Thesis Preparation	1
		13

FIRST YEAR, SECOND SEMESTER	UNITS
ARCH 613L Seminar: Structures Research, or	
ARCH 615L Seminar: Environmental Systems Research	4
ARCH 692aL Building Science Thesis	6
Electives	2
	12

SECOND YEAR, FIRST SEMESTER	UNITS
ARCH 692bL Building Science Thesis	8
Electives	3
	11

Dual Degrees

Master of Architecture/Master of Planning

The Master of Planning/Master of Architecture dual degree program facilitates highly related cross-disciplinary studies in architecture and in planning at the master's level. This program offers students interested in developing a career in urban design an opportunity to make more substantial commitments in both disciplines and to achieve a more coherent and extensive knowledge in the design of built environments and public policy. This dual degree program normally requires five semesters in residence.

Qualified students who are admitted to the graduate programs in both the School of Architecture and the USC Price School of Public Policy may complete both degrees in a highly integrated five-semester program. Such students must already possess a five-year professional degree in architecture.

Requirements

Requirements for completion of the dual degree program are 72 units, including 36 units in architecture and 36 units in planning, as follows:

ARCHITECTURE	UNITS
ARCH 410 Computer Transformations	2
ARCH 543 Research Methods	1
ARCH 605abL Graduate Architecture Design	6-6
ARCH 606 Advanced Architectural Theory	2
ARCH 607 Advanced Computation	2
ARCH 608 Urban Theory: Los Angeles Case Study	2
ARCH 609 Advanced Fabrication	2
ARCH 693abL M.Arch. Thesis, Option I, or	
ARCH 695abzL M.Arch. Thesis, Option II	2-8
Elective*	3
*3 units of electives taken within the School of Architecture.	

PUBLIC POLICY	UNITS
PPD 500 Intersectoral Leadership	2
PPD 501a Economics for Policy, Planning and Development	2

PPD 524 Planning Theory	2
PPD 525 Statistics and Arguing from Data	2
PPD 526 Comparative International Development	2
PPD 527 The Social Context of Planning	2
PPD 529 Legal Environment of Planning	2
PPD 533 Planning History and Urban Form	2

Note: 2-unit courses may be offered in seven-and-a-half week blocks.

Concentration Methodology: A 4-unit course selected from the concentration list shown in the Master of Planning program.

Planning Studios: PPD 531L (4, 4) to total 8 units. Students must complete 8 units of domestic or international planning studies under PPD 531L (4) to satisfy this requirement. A maximum of 12 units may be taken.

Electives: A total of 8 units of electives taken within the USC Price School of Public Policy.

Dual degree students, like all other MPI students, must take a comprehensive examination and fulfill the internship requirement.

Master of Landscape Architecture/Master of Planning

Qualified students who are admitted to the Master of Landscape Architecture program in the School of Architecture and to the graduate program in the USC Price School of Public Policy may complete both degrees in a highly integrated five-seven semester program.

Completion of the dual degree requires 24 units of courses in urban planning, 10 units of thesis option I or II and either 32 units of landscape architecture (for those students admitted with advanced standing); 48 units of landscape architecture (for those students admitted with advanced placement); or 74 units of landscape architecture (for those students admitted to the three-year curriculum).

Master of Landscape Architecture (Advanced Standing)/Master of Planning

Qualified students with a professional degree in landscape architecture who are admitted to the graduate program in the School of Architecture with advanced standing and to the USC Price School of Public Policy may complete both degrees in a highly integrated five-semester program.

Completion of the dual degree requires 66 units, including 32 units of courses in landscape architecture, 24 units of courses in urban planning, and 10 units of thesis option I or II.

LANDSCAPE ARCHITECTURE	UNITS
ARCH 543 Research Methods	1
ARCH 544 Urban Landscape: Process and Place	3
ARCH 545 Urban Landscape: Contemporary History and Prospect	3

ARCH 697abzL M.L.Arch. Thesis, Option II, or
ARCH 698abzL M.L.Arch. Thesis, Option I 2-8-O

Electives: 13 units of elective courses taken in the School of Architecture.

**Electives must be 400-level and above.*

STUDIOS UNITS

ARCH 542abL Landscape Architecture Design 6-6

Total units for MLA: 42

PLANNING UNITS

PPD 500 Intersectoral Leadership 2
PPD 501a Economics for Policy, Planning and Development 2
PPD 524 Planning Theory 2
PPD 525 Statistics and Arguing from Data 2
PPD 526 Comparative International Development 2
PPD 527 The Social Context of Planning 2
PPD 533 Planning History and Urban Form 2
RED 573 Design History and Criticism 2

Electives: 8 units of elective courses taken within the USC Price School of Public Policy.

Total units for MPL: 24

Dual degree students, like all other MPL students, must take a comprehensive examination and fulfill the internship requirement.

Total units for dual degree: 66

Master of Landscape Architecture (Advanced Placement)/Master of Planning

Qualified students who have completed a pre-professional undergraduate degree in landscape architecture or environmental design, or a professional degree in architecture and are admitted to the graduate program in the School of Architecture with advanced placement and to the USC Price School of Public Policy may complete both degrees in a highly integrated six-semester program.

Completion of the dual degree requires 82 units, including 48 units of courses in landscape architecture, 24 units of courses in urban planning, and 10 units of thesis option I or II.

LANDSCAPE ARCHITECTURE UNITS

ARCH 530 Landscape Architecture Practice 3
ARCH 531 The Natural Landscape 3
ARCH 543 Research Methods 1
ARCH 544 Urban Landscape: Process and Place 3
ARCH 545 Urban Landscape: Contemporary History and Prospect 3
ARCH 548 Media for Landscape Architecture: 3D Design 3

ARCH 565 Global History of Landscape Architecture 3
ARCH 697abzL M.L.Arch. Thesis, Option II, or
ARCH 698abzL M.L.Arch. Thesis, Option I 2-8-O

Electives: 11 units of elective courses taken in the School of Architecture.

**Electives must be 400-level and above.*

STUDIOS UNITS

ARCH 542abL Landscape Architecture Design 6-6
ARCH 642L Landscape Architecture Design 6

Total units for MLA: 58

PLANNING UNITS

PPD 500 Intersectoral Leadership 2
PPD 501a Economics for Policy, Planning and Development 2
PPD 524 Planning Theory 2
PPD 525 Statistics and Arguing from Data 2
PPD 526 Comparative International Development 2
PPD 527 The Social Context of Planning 2
PPD 533 Planning History and Urban Form 2
RED 573 Design History and Criticism 2

Electives: 8 units of elective courses taken within the USC Price School of Public Policy.

Total units for MPL: 24

Dual degree students, like all other MPL students, must take a comprehensive examination and fulfill the internship requirement.

Total units for dual degree: 82

Master of Landscape Architecture (Three-Year Curriculum)/Master of Planning

Qualified students admitted to the Master of Landscape Architecture three-year curriculum in the School of Architecture and to the USC Price School of Public Policy may complete both degrees in a highly integrated seven-semester program.

Completion of the dual degree requires 108 units, including 74 units of courses in landscape architecture, 24 units of courses in urban planning, and 10 units of thesis option I or II.

LANDSCAPE ARCHITECTURE UNITS

ARCH 530 Landscape Architecture 3
ARCH 531 The Natural Landscape 3
ARCH 534 Landscape Construction: Topographic Design 3
ARCH 535 Landscape Construction: Performance Approaches 3
ARCH 537L Urban Plant Ecology: Environmental Perspectives 4
ARCH 538L Urban Plant Ecology: Cultural Perspectives 4

ARCH 539L Media for Landscape Construction 2
ARCH 543 Research Methods 1
ARCH 544 Urban Landscape: Process and Place 3
ARCH 545 Urban Landscape: Contemporary History and Prospect 3
ARCH 548 Media for Landscape Architecture: 3D Design 3
ARCH 565 Global History of Landscape Architecture 3
ARCH 635 Landscape Construction: Assemblies and Documentation 3
ARCH 697abzL M.L.Arch. Thesis, Option II, or
ARCH 698abzL M.L.Arch. Thesis, Option I 2-8-O

Electives: 6 units of elective courses taken in the School of Architecture.

**Electives must be 400-level and above.*

STUDIOS UNITS

ARCH 541abL Landscape Architecture Design 6-6
ARCH 542abL Landscape Architecture Design 6-6
ARCH 642L Landscape Architecture Design 6

Total units for MLA: 84

PLANNING UNITS

PPD 500 Intersectoral Leadership 2
PPD 501a Economics for Policy, Planning and Development 2
PPD 524 Planning Theory 2
PPD 525 Statistics and Arguing from Data 2
PPD 526 Comparative International Development 2
PPD 527 The Social Context of Planning 2
PPD 533 Planning History and Urban Form 2
RED 573 Design History and Criticism 2

Electives: 8 units of elective courses taken within the USC Price School of Public Policy.

Total units for MPL: 24

Dual degree students, like all other MPL students, must take a comprehensive examination and fulfill the internship requirement.

Total units for dual degree: 108

Doctor of Philosophy in Architecture

The School of Architecture offers the Ph.D. in Architecture, designed to prepare individuals for university level teaching and professional research and for leadership positions in industry and professional architectural practice. Doctoral students must consult the Graduate School section, page xx, for regulations and requirements pertaining to its degrees. Students should also

consult the Academic Policies section, page xx, for additional information.

Completion of degree requirements is assumed to take a minimum of three years of approved graduate study and research beyond the bachelor's degree in a related field or a bachelor's degree and related practical experience. For the Ph.D. student without Advanced Standing, a minimum of 48 graduate units completed in residence on the University Park Campus in Los Angeles is required. Full-time study is represented by enrollment in six units during the semester. Usually, the school and the student's qualifying exam committee insist on a clear and mutually understood commitment of time and energy by the student to ensure significant involvement in the doctoral learning experience.

Application and Admission

Admission to the Ph.D. is granted by the Dean of the School of Architecture. However, only a letter from the Office of Graduate Admission constitutes an official offer of admission; correspondence with department chairs or individual faculty members does not constitute admission.

Priority consideration for Ph.D. student funding will be given to those applicants who submit all application materials by December 1. The university will continue to accept and consider applications submitted after December 1. Those who wish to submit applications after the deadline should check with the School of Architecture. Applications for admission to the Ph.D. program are made once each year for fall semester admission.

The admission decision is made using criteria which include verification that the applicant has a bachelor's degree from an accredited college or university, has maintained a high grade point average in the last 60 units of undergraduate work and has earned a competitive score on the verbal and quantitative portions of the Graduate Record Examinations (GRE). Other elements of the applicant's educational and experiential background are also evaluated, including performance in other advanced degrees.

Each applicant should submit the following: (1) one copy of official transcripts of all previous college and university work (be sure that these official transcripts show an awarded degree where appropriate); (2) one copy of GRE scores; (3) copy of TOEFL or IELTS scores for international students whose first language is not English; (4) a 1000-word essay discussing the applicant's background; reasons for wanting to pursue a doctoral degree; and identifying his or her personal, educational and professional goals; (5) an up-to-date resume, including academic and professional accomplishments; (6) three letters of recommendation, at least two from previous instructors, others from instructors or from professional supervisors or colleagues (the letters should indicate the applicant's academic and professional accomplishments and potential); (7) a completed USC Graduate Admission Application, along with the nonrefundable application fee; and (8) samples of work such as a portfolio, publications, software programs, etc. The program is intended for people with considerable intellectual interests. Additional requirements for international students are listed under Admission of International Students.

Upon admission to the program, each student will be assigned a faculty adviser who will oversee his or her program.

Doctoral Admission with Advanced Standing

Students entering with a Master of Architecture degree or Master of Building Science degree (or their equivalent) from USC or another university may be admitted with Advanced Standing. A minimum of 36 units of course work beyond the first graduate degree, exclusive of 794 Doctoral Dissertation preparation, is required for doctoral degree students with a USC Master of Building Science degree admitted with Advanced Standing. For those students entering with a Master of Architecture degree or Master of Building Science degree (or their equivalent) from another university and admitted with Advanced Standing, a minimum of 40 units of course work beyond the first graduate degree is required. Additional course work may be required if deemed necessary by the student's faculty. See Doctoral Admission with Advanced Standing in the Graduate School section on page xx.

Transfer Credits

The application of any available transfer credits toward a graduate degree at USC will be determined by the School of Architecture, based on the semester units available for transfer as shown in the Transfer Credit Statement. Work experience in architecture or closely related activities should be of benefit to the students involved, but will not be considered equivalent to academic education. A maximum of 6 units of transfer credit may be applied toward a doctoral degree for those admitted with Advanced Standing. Admission with Advanced Standing is based upon a completed master's degree. The only course work available for transfer credit is course work taken after completion of that degree. No exceptions are allowed.

Students entering the doctoral program with a master's degree or graduate course work in a field other than architecture work may receive up to 12 units of transfer credit toward the Ph.D.

Deferral of Enrollment

Admission to the university is granted for a specified semester, and it is expected that students will begin their programs during that semester. The school will normally allow students to defer their enrollment up to one year from the admission semester. Students who wish to defer enrollment should notify the school in writing no more than 60 days before the beginning of the semester of admission or they may be required to reapply for admission. Please note that more stringent regulations apply to international students. See the Graduate Admission section, page xx, for further information.

Admission to Candidacy

Acceptance to graduate standing does not in itself imply that the student is admitted or will be admitted to candidacy for an advanced degree. Application for admission as a candidate for an advanced degree is a separate and subsequent step. See the Graduate School section, page xx, for further information.

General Requirements for the Ph.D. Degree Screening Procedures

Ph.D. students are required to pass a screening procedure before the student has taken more than 24 units (including research courses). Passing this procedure is prerequisite to continuation in the doctoral program. This is designed to ensure that only those students who have demonstrated intellectual and scholarly potential continue in the program. Students who fail the screening procedure will be advised that they have not been recommended to continue in the Ph.D. program and that any additional work may not be counted toward the degree.

Prior to screening, each student prepares a résumé and a preliminary statement describing the fields of specialization. After passing the written screening examination, the student meets with the committee to discuss the proposal for course work, fields of specialization and research interests. The committee chair serves as the student's principal adviser in preparing for the qualifying examination.

Qualifying Exam Committee

Each student selects a qualifying exam committee, which officially oversees the student's academic program through the qualifying examination. The qualifying exam committee should be established at least one semester prior to taking the qualifying examination. This should be accomplished by the beginning of the second year, following successful screening. An appointment of committee form, which can be obtained from the Graduate School Website (usc.edu/schools/GraduateSchool/), should be used to establish the qualifying exam committee. Students initiate the paperwork and submit the signed form to the dean's office.

Five committee members are designated to provide guidance in the field developed by the student. A minimum of three members, including at least one tenured member, must be from among the faculty participating in the Ph.D. in Architecture degree program, and at least one member must be from outside the School of Architecture. This committee bears responsibility for recommending the student for admission to candidacy. After approval of the student's program and time schedule, the program is submitted in writing to the doctoral director. Students will formalize their relationship with their committees through the development of a study plan which specifies all courses completed, date of screening decision, the area of concentration, and which courses will be taken and when, in order to prepare for the qualifying examination. This study plan will be signed by the student, the members of the qualifying exam committee and the faculty doctoral director. It will be filed in the doctoral office.

Qualifying Examination

Students must complete at least 24 units of course work in the doctoral program with a GPA of at least 3.0 before attempting the qualifying exam.

The qualifying exam committee prepares a comprehensive written examination covering the field of study. The exact format for the written portion is determined by each committee in advance. Answers to the questions in the written portion are graded by all committee members. Following completion of the written portion, the entire committee conducts an oral

examination of the student, focusing on material both complementary and supplementary to the written examination but relevant to the field and overall program selected by the student. Upon passing both portions of the qualifying examination, the student becomes a candidate for the Ph.D. degree.

The objective of the qualifying examination is to evaluate the student's knowledge and to serve as an instrument to demonstrate competence in the student's chosen field of concentration in preparation for candidacy. Qualifying examinations are scheduled once each year during August. The oral phase of the examination must be completed within 60 days following the written segment. Both parts of the examination must be passed in order to qualify. Failure on one of the two parts of the examination does not require retaking both parts. Only the part failed must be redone.

The examination will be collaboratively designed by the instructors of the core courses and oriented toward testing students' ability to integrate material from these courses. A portion of this examination will focus on methodological issues. The written portion of the examination will be administered during a full-day session.

The process of grading examinations will be accomplished in two ways. For the written examination, the grading will be done by a committee comprising the core course instructors and the doctoral director. For the oral examination, grading will stay with the qualifying exam committee. Upon passing both the core and oral portions of the examination, the student will be expected to reduce the qualifying exam committee to a dissertation committee. See General Requirements for the Doctor of Philosophy Degree, page xx.

Dissertation Committee

Once students pass the qualifying examination, the qualifying exam committee recommends the student for candidacy and a dissertation topic is approved, a dissertation committee must be formed as soon as possible. The size may range from three to five members, one member of which must be from outside the school.

Dissertation Proposal

After the successful completion of the qualifying examination, the doctoral student will be required to present a complete research proposal for the dissertation. The proposal will be circulated for review and evaluation by the dissertation committee. This proposal should include the methodology, research design, literature review and instrumentation (if applicable). After this step has been completed, further work leading to the completion of the dissertation is authorized.

Defense of the Dissertation

Oral defense of the dissertation before the dissertation committee is usually made on a preliminary draft. After the dissertation committee has approved the dissertation in substance, the candidate must defend it before the committee and other interested doctoral program faculty and colleagues. Successful completion of the oral defense marks the ultimate step for the candidate within the School of Architecture. The candidate must be certain that the dissertation also meets specific university requirements before acceptance by the Graduate School. See the Graduate School section, page xx, for further information.

All theses and dissertations submitted in fulfillment of requirements for graduate degrees must conform to university regulations with regard to format and method of preparation.

Unit Requirement and Time Limit

The Ph.D. degree in Architecture requires a minimum of 72 units (including a minimum of 4 units of ARCH 794) of graduate level course work, and has a minimum residency requirement of three years. Students must maintain a 3.0 average GPA and complete all required course work within five years. The maximum time for the completion of all requirements for the doctoral degree is eight years.

A leave of absence can be granted upon approval of the guidance or dissertation committees. There is no automatic readmission if the student fails to maintain continuous registration or fails to meet academic standards.

Core Curriculum

Year 1: Basic and professional studies

Acquire at a minimum the knowledge that is characteristic of the master's degree students or equivalent and define the research program.

Year 2: Advanced studies

Year 3: Research and dissertation

While a Master of Architecture or related degree is not a prerequisite for admission, those students entering the doctoral program without a master's degree in architecture or related field will be required to complete a core curriculum.

REQUIRED COURSES		UNITS
ARCH 419	Architectural Sustainability Tools and Methods	3
ARCH 513L	Seminar: Advanced Structures	4
ARCH 515L	Seminar: Advanced Environmental Systems	4
ARCH 519	Sustainability in the Environment: Infra-structures, Urban Landscapes and Buildings	3
ARCH 611	Advanced Building Systems Integration	4
ARCH 613L	Seminar: Structures Research	4
ARCH 615L	Seminar: Environmental Systems Research	4
ARCH 790	Doctoral Research	20
ARCH 791	Proposal for Doctoral Dissertation	1
A minimum of 4 units of:		
ARCH 794abz	Doctoral Dissertation	2-2-0
GRSC 850ab	The Professoriate: Preparing for the Future	2-2
Electives		17

Courses of Instruction

ARCHITECTURE (ARCH)

All courses must be taken in *sequential* order, *a* before *b*.

The terms indicated are *expected* but are not *guaranteed*. For courses offered during any given term, consult the *Schedule of Classes*.

ARCH 102abL Architectural Design I (4-4, FaSpSm)

Introduction to principles and processes; sequence of exercises emphasizing development of basic skills, ideas, and techniques used in the design of simplified architectural projects.

ARCH 105L Fundamentals of Design Communication (2, FaSp)

Visual communication techniques applicable to the design of the built environment; drawing, photography, modeling.

ARCH 106x Workshop in Architecture (2, FaSp)

Introduction to the ways architecture is created and understood, for minors and non-majors. Hands-on discussion and laboratory session with some drawing and model building. Not available for credit to architecture majors.

ARCH 114 Architecture: Culture and Community (2, FaSp)

Introduction to the ways architecture represents aspirations of culture, satisfies practical and spiritual needs, shapes the social and urban environment, and helps preserve the planet.

ARCH 202abL Architectural Design II (6-6, FaSpSm)

Continuing development of principles and processes; sequence of projects selected to broaden awareness of design issues at various scales in the urban context. *Prerequisite:* ARCH 102bL.

ARCH 203 Visualizing and Experiencing the Built Environment (4)

Methods for direct observation and recording of the directly experienced built environment through drawing, diagramming, photographing, and writing. Course includes exercises and field experience.

ARCH 205abL Building Science I (4-4, FaSp)

The process and communication of building design: physical building shell, systems for structure, enclosure, and space ordering. *Prerequisite:* CE 107.

ARCH 207 Computer Applications in Architecture (2, FaSpSm)

Introduction for the non-programmer to the uses of the computer in architecture, including the application of existing programs and their implications for design. Overview and use of software types. Lecture and laboratory.

ARCH 211 Materials and Methods of Building Construction (3, Sp)

Basic considerations and design implications of the problem of determination of the materials and construction details and processes for buildings.

ARCH 213ab Building Structures and Seismic Design

(3-3, FaSp) *a*: Investigation and design of elements and systems for building structures; applied mechanics, strength of materials, structural investigation as a design tool. *b*: Investigation and design of structure systems: their resistance to seismic and wind forces and integration with architectural design for synergy of form and structure. *Recommended preparation*: PHYS 125 and MATH 108.

ARCH 214ab World History of Architecture (a: 3, Sp; b: 3, Fa) A world-wide perspective of architectural history as a product of social, cultural, religious, and political dimensions. *a*: 4500 BCE to 1500 CE; *b*: 1500 CE to present.

ARCH 215 Design for the Thermal and Atmospheric Environment (3, Fa) Ideas, problems, and computations related to the design of buildings in response to the thermal and atmospheric environment; passive solar systems, mechanical control systems.

ARCH 220 The Architect's Sketchbook (2, FaSp) The architect's sketchbook as a portable laboratory for perceiving and documenting space introduces the study of the built environment. On-site sessions develop drawing, observation, and visualization skills.

ARCH 260L Landscape Architecture Design I (6, Sp) Development of principles and processes for the design of gardens and parks and the definition of open space in the built environment. *Prerequisite*: ARCH 202a.

ARCH 302abL Architectural Design III (6-6, FaSp) Special integrative year including design issues relating to housing. *Prerequisite*: ARCH 202bL.

ARCH 303 Principles of Spatial Design I (4) Introduction to design principles and processes; sequence of exercises emphasizing development of basic skills, ideas, and techniques used in the creation of simplified urban space design projects. *Prerequisite*: ARCH 203.

ARCH 304x Intensive Survey: Prehistory to the Present (4, FaSp) An intensive historical overview of architecture from prehistory to the present, emphasizing interrelationships of various global cultures and how social considerations were translated into form. Not available for credit to architecture majors.

ARCH 305abL Building Science II (4-4, FaSp) The design of a building as a complex of interacting systems; relations of subsystems; influences of production and marketing on design. *Prerequisite*: ARCH 205abL.

ARCH 306 Shelter (4, Sp) Investigation of issues, processes, and roles of individuals, groups and communities in relation to present and future shelter needs and aspirations. (Duplicates credit in former ARCH 206.)

ARCH 307 Digital Tools for Architecture (3, FaSp) Exploration of digital tools with an emphasis on building information modeling (BIM), parametric modeling, and interoperability including special topics in Architecture/Engineering/Construction (AEC) and sustainable design. *Recommended preparation*: basic computer skills.

ARCH 313 Design of Building Structures (3, Fa) Problems and processes of design of building structures; structural investigation for design; codes and standards; design of elements and systems of wood, steel, masonry, and concrete for gravity and lateral loads. *Prerequisite*: ARCH 213a.

ARCH 314 History of Architecture: Contemporary Issues (3, FaSm) Examination of the buildings, issues and images, the polemics and personalities that are animating current architectural discourse and practice. *Prerequisite*: ARCH 214b.

ARCH 315 Design for the Luminous and Sonic Environment (3, Sp) Ideas, problems, and computations related to the design of buildings in response to the luminous and sonic environment.

ARCH 316 Place and Culture (3, FaSpSm) (Study abroad programs only) Study of the relationships between places and culture through readings, lectures, discussion and weekly field trips.

ARCH 326 The Modern Movement in Architecture (4, Sp) Major theories of modern architecture are presented by studying the work of masters such as: Gropius, Mies van der Rohe, Corbusier, and Kahn.

ARCH 341 History of Italian Architecture 1400-1990 (4, Sp) Introduction to the important buildings, architects and architectural movements in Italy from the Renaissance to the present.

ARCH 360abL Landscape Architecture Design II (6-6, FaSp) *a*: Principles, policies and practice of planned community design focusing on site planning. *Prerequisite*: ARCH 260. *b*: Principles and design of conservation and enhancement of cultural and natural resources. Studio investigates historic landscape landmarks, conservation programs and urban landscape renewal. *Prerequisite*: ARCH 360a.

ARCH 361L Ecological Factors in Design (3, Fa) Lectures, laboratory exercises and field trips introduce basic knowledge of incorporating ecological factors in urban design and interaction of landscape science with the human environment.

ARCH 362 Landscape Architecture Construction (3, Sp) An investigation of construction processes, horizontal and vertical control of space, site detailing control of space, site detailing and materials and construction drawings. *Prerequisite*: ARCH 211 and ARCH 213a.

ARCH 363 Plant Material Identification: Horticulture (4, Fa) Introduction to 300 species of plantings. Learn visual characteristics, nomenclature, cultural considerations, and design applications through visits to existing gardens.

ARCH 364 Materials and Methods of Landscape Architecture (3, Fa) Aesthetic and ecological concepts for planting design. Methods of selecting appropriate plants for site development and an understanding of irrigation techniques for a given site. *Prerequisite*: ARCH 363.

ARCH 370 Architectural Studies — Expanding the Field (2) Survey of opportunities, specializations, and professions related to architecture provides a resource for professional growth for architecture majors, and introduction to the field for non-majors.

ARCH 390 Special Problems (1-4, FaSp) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

ARCH 402abCL Architectural Design IV (6-6-6, FaSpSm) Selected areas of specialization; three projects chosen with advisement from a variety of studio offerings that concentrate on different areas of vital concern. *Prerequisite*: ARCH 302bL.

ARCH 403 Principles of Spatial Design II (4) Emphasis on developing advanced urban spatial design solutions set within contemporary urban conditions, with a particular emphasis on ecology, public space, neighborhoods and districts. *Prerequisite*: ARCH 303.

ARCH 404 Topics in Modern Architecture in Southern California (3, FaSp) Investigation of modern architecture in southern California within its cultural and historic contexts.

ARCH 405abL Building Science III (4-4, FaSp) Design of building systems as an experimental process. *Prerequisite*: ARCH 305abL.

ARCH 406 Global Studies: Topics in Architecture, Urbanism, History and Art (2, max 6) Offered for particular geographic areas of study. Required prerequisite for all full semester undergraduate global programs. Also intended for general interest in focused study on particular geographic area. *Prerequisite*: ARCH 214ab or ARCH 304.

ARCH 407 Advanced Computer Applications (4, FaSp) Investigation of computer graphic applications, emphasizing the role of computers in helping designers create and communicate using color (rendering), form (modeling), and time (animation) and the implications of future technological advancements. *Prerequisite*: ARCH 207 and ARCH 307, CADD studio or departmental approval.

ARCH 410 Computer Transformations (2) To explore the potential of computer-integrated design software; to develop techniques for critical analysis of architectural precedents; to expand the ability to visualize options; to expand perception; and to learn the basics of computer-integrated design. *Prerequisite*: ARCH 202b.

ARCH 411 Architectural Technology (3, Sp) Architectural design considered as a technological problem; influence of technology on design; buildings as integrated sets of subsystems. *Prerequisite*: ARCH 313.

ARCH 412L GeoDesign Practicum (4, FaSp) (Enroll in SSCI 412L)

ARCH 414 Perspectives in History and Theory in Architecture (2, max 6) Perspectives in Architecture and Urbanism is an advanced course that allows students to delve deeply into one aspect of world history, theory and/or contemporary issues to develop more focused and critical understanding of that discourse. *Prerequisite:* ARCH 214a, ARCH 214b or ARCH 304.

ARCH 417 Computer Programming in Architecture (3, Fa) Principles underlying computer programming, emphasizing algorithms, procedures, and program structures applicable to architecture.

ARCH 418 Designing with Natural Forces (3, Fa) Investigation of natural force effects and their relationships to architecture; laboratory work includes drawing, photography, model building and tests on models.

ARCH 419 Architectural Sustainability Tools and Methods (3, FaSp) Lectures, comparative studies and exercises on international architectural sustainability rating and certification systems.

ARCH 420 Visual Communication and Graphic Expression (3, Fa) An exploratory study of fundamental and innovative visual communication principles and graphic expression techniques to facilitate the design enquiry process for architects. *Prerequisite:* ARCH 302L.

ARCH 421 Digital Architectural Photography (2, FaSp) Perceiving and documenting the built environment through the perspective and frame of the digital camera. Mastering the basic principles of the digital image through an understanding of frame, light, exposure, color correction, and printing output.

ARCH 422L Architectural Photography — Film and Digital (3) See how light alters the visual impact of architectural forms; master high-resolution images both with film and digital; become a professional image developer/processor utilizing photographic software.

ARCH 423 Light, Color and the Character of Material (2, FaSp) Color theory, constructed drawings, constructed shadows, descriptive geometry, constructed perspective drawing, and layered wash techniques lead to experimentation with methods representing materiality and construction in design projects. *Prerequisite:* ARCH 105L.

ARCH 424L Field Studies in Architecture (2, FaSpSm) (Study abroad programs only.) Field studies using direct observation, site recordings/documentation, analysis and evaluation supplemented by discussions and readings in architecture. Department approval. *Recommended preparation:* core curriculum.

ARCH 425L Field Studies in Urbanism (2, FaSpSm) (Study abroad programs only.) Field studies using direct observation, site recordings/documentation, analysis and evaluation supplemented by discussions and readings in urbanism. Departmental approval. *Recommended preparation:* core curriculum.

ARCH 426L Field Studies in Tectonics (2, FaSpSm) (Study abroad programs only.) Field studies using direct observation, site recordings/documentation, analysis and evaluation supplemented by discussions and readings in tectonics. Departmental approval. *Recommended preparation:* core curriculum.

ARCH 430 Design Teaching Methods (2, FaSp) The teaching of architectural design is introduced through readings, seminar discussions, and the observation of teaching in action. In addition to a one hour per week seminar, each student will participate in a design practicum. *Prerequisite:* ARCH 302L.

ARCH 432 People, Places and Culture: Architecture of the Public Realm (4, Sp) Critical observation of the architecture of public buildings and places and the importance of design in promoting a better contemporary public life.

ARCH 434 City Cine: Visuality, Media and Urban Experience (3, FaSp) This seminar explores the relationship between urban experience and visual media (from the photographic, to the filmic, to the digital) from circa 1880 to the present.

ARCH 440m Literature and the Urban Experience (4, FaSp) Post-industrial revolution urban environments and dynamic relationships in cities such as Manchester, Paris, St. Petersburg, New York, and Los Angeles, as revealed in novels, architecture, and urban forms.

ARCH 441 A History of Architectural Theory: 1400–1914 (2, FaSp) A seminar on architectural theory from Alberti to Scott, reviewing primary texts and subsequent criticisms.

ARCH 442m Women's Spaces in History: "Hussies," "Harems" and "Housewives" (4, FaSp) Methods for studying patterns of spatial differentiation of women throughout history from home to city embodied in gender specific language and gendered spaces.

ARCH 444 Great Houses of Los Angeles (4, FaSp) An introduction to the architectural philosophies of seven influential California architects through readings and site visits to significant case studies. (Duplicates credit in former ARCH 322.)

ARCH 454 Contemporary Asian Architecture (4) Exploration of various "Asian" architectures, comparisons of areas, identifying current trends and impact of Asia on Southern California and Los Angeles.

ARCH 460L Landscape Planning Studio (6, Fa) Studio examining basic concepts and stimulating ecological landscape project planning. Preparation for landscape project and land management project. *Prerequisite:* ARCH 360b.

ARCH 461L Landscape Architecture Comprehensive Project (6, Sp) Preparation of an individual comprehensive design project under a faculty adviser to demonstrate knowledge of landscape architecture principles and professional skills. *Prerequisite:* ARCH 460L.

ARCH 463 Plant Material Identification: California Plant Communities (4, FaSp) Expand plant material vocabulary to include native plants of Southern California. Emphasis on bioengineering techniques for site design. *Prerequisite:* ARCH 363.

ARCH 465 History of Landscape Architecture (4, FaSp) Provides understanding of design of landscape in the Western world. Includes case studies on general and specific projects. Students develop personal theory of landscape design. (Duplicates credit in former ARCH 365.)

ARCH 466 Nature, Landscape and Gardens in Non-Western Cultures (4, Sp) Critical analysis and appreciation of landscape as cultural interpretation of nature and the representation of landscape as garden and public space in Asian, Islamic, and Pre-Columbian American civilizations. (Duplicates credit in former ARCH 366.)

ARCH 470 Concentration Capstone Seminar (4, FaSp) Collaborative research project and research paper in an area of concentration. Senior standing.

ARCH 481 Furniture Design (2, FaSp) An investigation into 20th century furniture design and its relationships to architecture, art and design.

ARCH 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

ARCH 499 Special Topics (2-4, max 8, FaSpSm) Selected topics in various specialty areas of architecture.

ARCH 501 Critical Topics in Architecture (2, FaSpSm) Seminar supporting the research, development, and writing of Degree Project Paper provides a comprehensive base of information for the final Bachelor of Architecture studio. *Prerequisite:* ARCH 402bL.

ARCH 502azL Architectural Design V (6-0, FaSpSm) The final comprehensive architectural project under the guidance of a faculty adviser to demonstrate architectural knowledge, skills, and professional interests and goals. Graded IP/L. *a: Prerequisite:* ARCH 402aL; *corequisite:* ARCH 501; *z: prerequisite:* ARCH 502a.

ARCH 505abL Graduate Architecture Design (6-6, FaSp) Emphasis on comprehensive architectural design; attention to theories and skills appropriate for practice in contemporary urban conditions. Open to graduate architecture majors only. *Prerequisite:* a Bachelor of Science degree in Architecture or its equivalent; *recommended preparation:* six semesters of architecture design.

ARCH 507 Theories of Computer Technology (3, FaSp) Fundamental theories and meanings of computation as a technique in architectural design. Lecture/discussion.

ARCH 510 Independent Degree Project Preparation (1, FaSpSm) Research and analysis, including written and graphic components, that tests a question/proposition in detail in preparation for Independent Degree Project Document. *Prerequisite:* ARCH 402b; *co-requisite:* ARCH 402cL.

ARCH 511L Building Systems (4, Fa) Studies of construction system development within the architectural design context; processes and issues of selection, evaluation, optimization, integration, design control, and innovation.

ARCH 512 Material + Process: Material Systems (2, Sp) Confronts the conventional concepts behind modern building science and material applications, reapplying the processes of fabrication and methods of construction to investigate materiality. *Prerequisite:* ARCH 211 or ARCH 511L.

ARCH 513L Seminar: Advanced Structures (4, Fa) Issues and problems in the development of structural systems for buildings; design criteria, system choice, design development, optimization, subsystem integration.

ARCH 514 Contemporary Issues in Architecture: A Critical Dialectic (3, Fa) Issues that are important to the contemporary built environment are explored using a dialectical format to encourage debate, augmented by invited speakers and topical readings.

ARCH 515L Seminar: Advanced Environmental Systems (4, Sp) A compressed course in design criteria and calculation methods for mechanical and passive solar systems (loads, plant system, duct, and storage sizing) and lighting and acoustics (CIE and IES methods, dBA and NC systems).

ARCH 517 Current Topics in Building Science (1, max 6, Fa) Critical studies in building science ranging from sustainability, lighting, acoustics, materials and methods, structures, energy issues, digital media, and fabrication. Students focus on minimum of two topics.

ARCH 518 Advanced Surface Tectonics: Methods in Material and Enclosure (2, Fa) Studies in contemporary building systems through analysis, research, and computational methods leading to the design of a prototypical building surface. *Recommended preparation:* A prior knowledge of fundamental building systems and 3D modeling.

ARCH 519 Sustainability in the Environment: Infrastructures, Urban Landscapes, and Buildings (3, FaSp) Methodologies and exercises on contextual design and environmentally sound technologies (EST's) applications for the sustainability of urban infrastructures, operative landscapes, and building integration in the urban system.

ARCH 520 Housing and Community Design for an Aging Population (2, Fa) Exploration of the role design plays in enhancing independence and well-being for older people by examining cross-cultural models of housing and community design.

ARCH 524 Professional Practicum (1, max 2, FaSpSm) Comparative studies of professional practice between U.S. firms and firms in other countries. Open to international upper-division and graduate architecture students only. Graded CR/NC. *Prerequisite:* ARCH 302bL.

ARCH 525 Professional Practice: Pre-Design, Project and Office Administration (3, Fa) Design methodology, typology programming, site analysis, budget formulation and pro-forma procedures. Office management, emphasizing professional service and professional ethics as well as project management focusing on the architect's responsibilities during construction. (Duplicates credit in former ARCH 520 and ARCH 522.) *Prerequisite:* ARCH 302bL.

ARCH 526 Professional Practice: Legal and Economic Context, Project Documentation (3, Sp) The laws and regulations that affect the practice of architecture and building economics and the development of comprehensive project documentation, detailing, specifications, drawing formats and organizations. (Duplicates credit in former ARCH 521 and ARCH 523.) *Prerequisite:* ARCH 302bL.

ARCH 527 Case Studies: The Development of Urban Housing (2, FaSp) An exploration of the various elements and stages of the housing development process. *Recommended preparation:* a preliminary understanding of real estate or housing.

ARCH 528 Urban Housing: Types and Typologies (2, Fa) Applications and precedents for the architect interested in designing multi-family housing. Review of the sources of modern housing types, the impact of building codes and technology on the form and construction of housing, and study of housing densities; comparative analysis of multi-family residential patterns. Major emphasis on critical knowledge of historic housing typologies as they are applied to site conditions and groupings, building form, section, organization, and the design of individual dwellings. *Recommended preparation:* two years of undergraduate architectural studies.

ARCH 529 Urban Housing: Programs, Precedents, and Recent Case Studies (2, Fa) Historical overview of the major domestic and international housing developments and innovations since the early 20th century. Case study format examining a wide range of issues that determine the form of urban housing in various cultures. Major emphasis on the detail analysis of social, technical, and design factors affecting recent housing developments. *Recommended preparation:* two years of undergraduate architectural studies.

ARCH 530 Landscape Architecture Practice (3, FaSp) Introduction to the principles and ethics, scope and activities, and types of organization for landscape architecture practice. (Duplicates credit in former ARCH 630.)

ARCH 531 The Natural Landscape (3, FaSp) Lectures, laboratory exercises and field trips introducing basic knowledge of the continually transforming landscape as a base for human settlement.

ARCH 532 Elements of the Urban Landscape (2, Fa) Study of the basic spatial and infrastructure elements of the city, and how urban places are formed. Typological analysis of buildings, open space, and urban patterns.

ARCH 533 Urban Landscape Case Studies (2, Sp) Lectures, discussion, and individual research on the physical, formal, and spatial characteristics of historical urban centers.

ARCH 534 Landscape Construction: Topographic Design (3, Sp) Techniques, strategies, materials, and standards to topographic design and construction in landscape architecture. In-class labs practice basic grading, drainage design, and stormwater management.

ARCH 535 Landscape Construction: Performance Approaches (3, Fa) Develop tools and knowledge to expand the performative boundaries of landscape architecture beyond common typologies. Topics range from ecological infrastructure to design with weather patterns. A systematic approach to case studies, landscape technologies, and field trips seeds the knowledge base and representational methods necessary to design and build these complex landscape performances.

ARCH 536 The Landscape Planning Process (3, FaSp) Methods of assessing urban places regarding natural, social, cultural and political factors; identification of landscape architecture planning and project implementation issues and strategies.

ARCH 537L Urban Plant Ecology: Environmental Perspectives (4, Fa) Principles and concepts of plant ecology for urban planting design; introduction to California native plant species and communities with field trips and case studies. One lecture and one lab each week.

ARCH 538L Urban Plant Ecology: Cultural Perspectives (4) Cultural perspectives of urban planting design and plant species found in Southern California emphasizing aesthetic, functional and ecological designs. One lecture and one lab each week. *Prerequisite:* ARCH 537L.

ARCH 539L Media for Landscape Architecture (2, Fa) Development of methods and skills for the study of landscape architecture design and for project presentation, including natural resource and urban mapping.

ARCH 540L Topics in Media for Landscape Architecture (2, max 6, FaSp) Exploration of emerging techniques for landscape architecture study, presentation and documentation; topics vary from year to year; may be repeated for credit when subject matter is different.

ARCH 541aL Landscape Architecture Design (6-6, FaSp) a: Projects on urban sites with emphasis on cultural and ecological purpose and on urban place and form; use of traditional and digital media. b: Projects in urban settings with emphasis on landscape continuities as well as development of integrative schematic proposals and detailed open space design.

ARCH 542aBL Landscape Architecture Design (6-6, FaSp) *a:* Project strategies for urban infrastructure repair and intervention, phasing, and design of initial catalytic projects. *Prerequisite:* ARCH 541bL. *b:* Projects for the public realm with emphasis on urbanity and connectivity, place and meaning.

ARCH 543 Research Methods (1, Fa) Introduction to methods of inquiry and documentation including critical review of published materials, techniques for systematic observation, generating findings from comparative studies of relevant precedents and problems, and legible presentation of outcomes.

ARCH 544 Urban Landscape: Process and Place (3, Fa) Projects are examined as incremental interventions in the formation and qualities of the evolving urban landscape. Case studies are explored to understand purposes, typologies, catalytic capacities, and strategies for urban landscape design.

ARCH 545 Urban Landscape: Contemporary History and Prospect (3, Sp) Explores contemporary landscape architecture propositions and projects in the context of cities. The exploration methodology includes the study of epochal projects and theoretical texts organized by central themes of nature and culture.

ARCH 546 Topics in Landscape Architecture: Issues and Practices (3, max 6) A broad range of developing urban landscape conditions and issues, both domestic and global, are given focused attention.

ARCH 547 Urban Nature (3, Sp) Interactions of cities and nature: introduction to the ecology of cities; major threats to urban biodiversity interacting with human attitudes; review of restoration and conservation projects. *Recommended preparation:* ARCH 531.

ARCH 548 Media for Landscape Architecture: 3D Design (3) Developing and communicating landscape architecture design intent using visualization tools for three-dimensional studies.

ARCH 549 Fundamentals of Heritage Conservation (3, FaSm) Concepts and strategies for conservation of significant elements of the built environment: buildings, sites and communities as revealed by readings, site visits, and case studies.

ARCH 550 Heritage Conservation Policy and Planning (3, Sp) Conservation practice within an economic, political, and cultural context looking at the regulatory environment, public advocacy and policy, real estate development, heritage tourism, environmental sustainability, cultural diversity, and interpretation. *Recommended preparation:* ARCH 549.

ARCH 551 Conservation Methods and Materials (3, Sp) Concepts and techniques for building conservation including identification of treatments, recordation and research, material properties and behavior, building forensics, and project implementation. *Recommended preparation:* ARCH 549.

ARCH 552 Introduction to Historic Site Documentation (2, Sp) Survey of basic guidelines and standards for documentation in historic preservation, including cultural resource surveys, historic structures reports and Historic American Building Survey and Historic American Engineering Record recordation.

ARCH 553 History of American Architecture and Urbanism (3, Fa) History of American architecture and urbanism from prehistory to World War II examined in relation to European influences and indigenous developments.

ARCH 554 Heritage Conservation Practicum — Advanced Documentation (3, max 6, FaSp) Heritage conservation practicum utilizing in-depth documentation methodology to explore the historic built environment of greater Los Angeles. Topics will vary from year to year.

ARCH 555 Global Perspectives in Heritage Conservation (2, max 4, Fa) In-depth analysis of international heritage conservation practice with a focus on a single country, continent, or world region outside the United States. Topics will vary from year to year; may be repeated for credit when subject matter is different.

ARCH 556 Readings in Heritage Conservation Theory (2, Fa) Trans-disciplinary intensive reading and discussion course related to issues in contemporary heritage conservation. *Prerequisite:* ARCH 549.

ARCH 557 Sustainable Conservation of the Historic Built Environment (2, Fa) Analysis of the intersection between “green building” and historic resources with an emphasis on stewardship and sustainability.

ARCH 561 Urbanism Themes and Case Studies (2, Fa) Examines urbanism through case studies in theory and design to understand the impacts of globalization, technology, and sustainability on the contemporary city.

ARCH 562 Architecture Themes and Case Studies (2) Architectural themes and case studies focusing on the design and development of architecture, from the industrial city to today.

ARCH 563 Contemporary Architectural Theory (2) Investigates, compares, and critiques modern and contemporary theories of the designed and built environment by focusing on key figures, movements, and texts.

ARCH 564 Descriptive and Computational Architectural Geometry (2, Sp) Introduction to the history, methods, and cases of descriptive and computational geometry impacting representational, modeling, and historically significant paradigms of architectural design. Introduces a range of geometric first principles, technologies and techniques through contemporary design tools.

ARCH 565 Global History of Landscape Architecture (3, Fa) Understanding of the global history of landscape design in relation to social, political, religious, environmental and aesthetic principles; current design theory, projects and their historical references are critically reviewed and analyzed. (Duplicates credit in ARCH 465.)

ARCH 566 Cross Cultural Topics in Landscape Architecture History (3, max 6, FaSp) Comparative analysis and appreciation of landscape architecture as a manifestation of nature, society, and design. Topics and world regions vary from year to year; may be repeated for credit when subject matter is different.

ARCH 573 Seismic Design (2, Fa) Theory, design methodology and practice of how seismicity affects architecture and structural system selection required for robust earthquake performance and seismic sustainability. *Prerequisite:* ARCH 313; *recommended preparation:* basic knowledge of physics and exposure to architectural design and building structures.

ARCH 577L Lighting Design (4, Sp) The physics, technical knowledge, professional knowledge, design, and documentation processes used in architectural lighting design, including first principles, manual calculations and computer simulations. *Recommended preparation:* Some knowledge of physics and exposure to the design process and design presentation skills.

ARCH 580L Field Studies (3, max 6, FaSpSm) Off-campus field studies using direct observation, site recordings/documentation, analysis and evaluation supplemented by discussions and readings.

ARCH 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

ARCH 596 Building Science Thesis Preparation (1, FaSp) Exploration of topics leading to the development of a thesis prospectus. Topics may be in the areas of building structures, seismic design, environmental control, passive and active energy, or other relevant topics. Graded CR/NC.

ARCH 599 Special Topics (2-4, max 8, FaSpSm) Selected topics in various specialty areas of architecture.

ARCH 605abzL Graduate Architecture Design (6-6-o, FaSpSm) *a:* Comprehensive project emphasizing the interaction between general principles and local sites, building technologies and total building design. *b:* Advanced topical investigations emphasizing diverse areas of specialization. Projects will be faculty-led research investigations that concentrate on diverse areas of vital concern. Graded IP/L. *z:* Advanced topical investigations emphasizing diverse areas of specialization. Projects will be faculty-led research investigations that concentrate on diverse areas of vital concern. Graded IP/L.

ARCH 606 Advanced Architectural Theory (2, Fa)

Interrogates the architectural and cultural landscape of our contemporary cities through a combination of lectures and seminars on theories of place, identity, aesthetics, and technology.

ARCH 607 Advanced Computation (2, Fa)

Introduction to a range of new technologies and techniques examining their technical and theoretical implications including advanced computational design techniques and geospatial design tools.

ARCH 608 Urban Theory: Los Angeles Case Study (2, Fa)

Critically investigates the urban condition of Los Angeles through lectures, readings, and field visits. Aims to heighten awareness of the entwinement of environment, culture, architecture and the contemporary city.

ARCH 609 Advanced Fabrication (2, Fa)

Introduction to a range of new technologies and techniques examining technical and theoretical implications including a range of digital fabrication technologies, robotics and film-making techniques.

ARCH 610L Advanced Graduate Architecture Design (6, FaSpSm)

Elective advanced design and research studio investigations. As faculty-led topical themes, the design-based projects will engage critical topics engaging diverse areas of specialization. *Prerequisite:* ARCH 605b.

ARCH 611 Advanced Building Systems Integration (4, Fa)

Design criteria development, material and construction process methods, occupancy based load profiles, performance/material life-cycle-mandates, durability for advanced building systems including integrity in sustainable urban systems.

ARCH 613L Seminar: Structures Research (4, FaSp)

An overview of research topics in building structures; detailed investigation of selected major issues.

ARCH 615L Seminar: Environmental Systems Research (4, Sp)

A detailed examination of current issues in the thermal, acoustical, and radiant environment; recent developments in criteria, systems, controls, design tools and simulations; an understanding of the relationships between environmental factors, economics, and architectural goals.

ARCH 635 Landscape Construction: Assembly and Documentation (3, Sp)

Learn and practice the process by which a landscape design is assembled through materials systems and design documentation.

ARCH 642L Landscape Architecture Design (6, Fa)

Fully integrated landscape place design; reclamation sites at significant urban or natural locations. *Prerequisite:* ARCH 542abL.

ARCH 690abL Directed Research (a: 2-8; b: 2-8, FaSpSm)

Graded CR/NC.

ARCH 691abz Heritage Conservation Thesis Preparation and Thesis (2-6-o, Sp)

Introduction to, and exploration of, topics leading to the development of a thesis prospectus and directed research towards the completion of the master's thesis in heritage conservation. Credit on acceptance of thesis. Registration restricted to Master of Heritage Conservation students who have satisfactorily completed 12 hours of graduate course work and have permission of the Program Director. Graded IP/CR/NC. *Prerequisite:* ARCH 549, ARCH 553.

ARCH 692abzL Building Science Thesis (6-8-o, FaSpSm)

Research and thesis for the Master of Building Science degree. Credit on completion of thesis. Graded IP/CR/NC. *Prerequisite:* ARCH 596.

ARCH 693abzL M.Arch. Thesis, Option I (2-8-o, FaSpSm)

Directed research option for M.Arch. degree. Credit on acceptance of research project. Graded IP/CR/NC.

ARCH 695abzL M.Arch. Thesis, Option II (2-8-o, FaSpSm)

Design thesis for the Master of Architecture degree. Credit on acceptance of thesis. Graded IP/CR/NC.

ARCH 696abcZL Building Science Thesis (1-6-8-o)

Research and thesis for the Master of Building Science degree. Credit on acceptance of thesis. Graded IP/CR/NC.

ARCH 697abzL M.L.Arch. Thesis, Option II (2-8-o, FaSpSm)

Field studies and thesis for the M.L.Arch. degree. Credit on completion of thesis. Graded IP/CR/NC.

ARCH 698abzL M.L.Arch. Thesis, Option I (2-8-o, FaSpSm)

Directed research option for the M.L.Arch. degree. Credit on acceptance of research project. Graded IP/CR/NC.

ARCH 790 Doctoral Research (1-12, FaSp)

Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the School of Architecture. Graded CR/NC.

ARCH 791 Proposal for Doctoral Dissertation (1, Fa)

Credit on acceptance of dissertation proposal. Graded CR/NC.

ARCH 794abcdz Doctoral Dissertation (2-2-2-2-o, FaSpSm)

Credit on acceptance of dissertation. Graded CR/NC.



Students in the USC Marshall School of Business gain invaluable practical knowledge through the Experiential Learning Center, which tests their communication, management and negotiation skills in real-world business scenarios. “Promoting ‘authenticity’ is critical in the education of our students,” said Warren Bennis, distinguished professor of business administration and pioneer in leadership studies. “The greater their proximity to true business experience and the actual practice of leadership, the more they will understand the responsibilities that await them.”

With its international student body, world-class faculty and strategic location at the gateway to the Pacific Rim, the USC Marshall School of Business offers an unparalleled, hands-on education in global business, providing course work in accounting, communications, economics, entrepreneurship, finance, information systems, marketing, management, operations, real estate and statistics. USC Marshall fosters an understanding of the role and relevance of business in society, a core component of the school’s vital mission.

Founded in 1920, USC Marshall is one of the nation’s oldest and most prominent business schools. Through its broad range of academic offerings and the work of its Centers of Excellence, USC Marshall continues to set the standard in the 21st century for leadership and innovation in business education.

USC Marshall places strong emphasis on experiential learning. All graduate students are required to have international experience as part of their degree programs. Undergraduate students also have access to numerous overseas programs, including study abroad, international internships and week-long foreign travel experiences, combined with course work focused on the economy, business practices, language and history of the host country.

USC Marshall trains professionals at every career level, in multiple locations and on a full-time, part-time or weekend schedule. The undergraduate program is ranked among the top in *U.S. News & World Report*. *The Wall Street Journal* puts its Executive MBA program, offered in Los Angeles, San Diego and Shanghai, number one for leadership and management and number four overall.

USC Marshall offers a complete array of degree options for every kind of student — and a dynamic academic environment that places it at the forefront of leading business schools around the world.

USC Marshall School of Business**Senior Administration**

James G. Ellis, *Dean, Robert R. Dockson Dean's Chair in Business Administration*

John Matsusaka, Ph.D., *Vice Dean, Faculty and Academic Affairs*

Fernando Zapatero, Ph.D., *Vice Dean, Graduate Programs*

Sandra Chrystal, Ph.D., *Vice Dean, Online and Executive Education*

Deborah MacInnis, Ph.D., *Vice Dean, Undergraduate Programs*

Gregg B. Goldman, MBA, *Senior Associate Dean, Finance and Administration and Chief Financial Officer*

Evie Lazzarino, B.A., *Associate Dean, Communications*
Matthew De Vecchi, Ed.M., *Associate Dean for External Relations*

Academic Programs

Donna Bean, MBA, *Assistant Dean, Academic Programs*

Finance and Administration

Denise Millard, MBA, *Director, Financial Planning and Management*

Steve Adcock, MBA, *Director, Human Resources*

Undergraduate Administration

Kim D. West, Ph.D., *Associate Dean, Undergraduate Programs*

Tiffani Frye, *Director, Undergraduate Admissions*
Maureen McHale, Ph.D., *Director, Undergraduate Advising*

Tyrone Callahan, Ph.D., *Director, World Bachelor in Business Program*

Graduate Programs Administration

Diane Badame, Ph.D., *Assistant Dean and Academic Director, Full-Time MBA Program*

Keith Vaughn, MBA, *Assistant Dean/Director, MBA Admissions*

Gary Fraser, Ed.D., *Assistant Dean/Executive Director, MBA Career Services*

Arif Ansari, Ph.D., *Academic Director, MBA.PM Program*

Jeanette L. Christensen, M.A., *Director, MBA.PM Program*

Tim Campbell, Ph.D., *Academic Director, EMBA*
Brigitte M. Engel, B.S., *Director, EMBA Program*

Baizhu Chen, Ph.D., *Academic Director, GEMBA*

John D. Van Fleet, MBA, *Assistant Dean and Executive Director, GEMBA*

Selahattin Imrohorglu, Ph.D., *Assistant Dean and Academic Director, IBEAR MBA Program*

Fujiko Terayama, B.A., *Director, IBEAR MBA Program*
Susan Hunt, M.A., Ph.D., *Assistant Dean, M.S. and Graduate Certificate Programs*

Merle Hopkins, Ph.D., *Academic Director, Master of Medical Management*

John Lee, M.S., *Assistant Director, Master of Medical Management*

Robert Turrill, Ph.D., *Academic Director, Master of Business for Veterans*

Kenneth Haycock, Ph.D., *Director, Master of Management in Library and Information Science*

Karla Wiseman, MBA, *Assistant Dean and Executive Director, Executive Education*

Anakkarat Barth, M.A., *Director, Office of Global Programs and Partnerships*

Ph.D. Program

K.R. Subramanyam, Ph.D., *Associate Dean, Ph.D. Program*

Michelle Silver Lee, M.S.Ed., Ed.D., *Associate Director, Ph.D. Program*

USC Leventhal School of Accounting**Accounting 101**

(213) 740-4838

FAX: (213) 747-2815

Email (graduate students):

MAcc.MBT@marshall.usc.edu;

(undergraduate students):

lsoa_undergrad@marshall.usc.edu

marshall.usc.edu/lsoa

Administration

William W. Holder, DBA, CPA, *Dean, Alan Casden*

Dean's Chair at the Leventhal School of Accounting

Mark L. DeFond, Ph.D., CPA, *Associate Dean, Academic Affairs*

Shirley Maxey, B.A. *, *Associate Dean, Master's Programs*

Mildred G. Penner, M.A., *Assistant Dean, Undergraduate Programs*

Faculty

George Bozanic and Holman G. Hurt *Chair in Sports and Entertainment Business: S. Mark Young, Ph.D.**

Deloitte & Touche LLP Chair in Accountancy: Kenneth A. Merchant, Ph.D., CPA

*A.N. Mosich Chair in Accounting: Mark L. DeFond, Ph.D., CPA**

Accounting Circle Professor of Accounting: Randolph Beatty, Ph.D.

KPMG Foundation Professor of Accounting:

K.R. Subramanyam, Ph.D.

USC Accounting Associates Professor of Accounting:

Sarah E. Bonner, Ph.D., CPA*

*Arthur Andersen & Co. Alumni Associate Professor of Accounting: Mark Soliman, Ph.D.**

Professors: Jerry L. Arnold, Ph.D., CPA; Randolph P. Beatty, Ph.D., CPA; Sarah E. Bonner, Ph.D., CPA; Mark L. DeFond, Ph.D., CPA*; William W. Holder, DBA, CPA; Thomas W. Lin, Ph.D., CMA; Kenneth A. Merchant, Ph.D., CPA; Daniel E. O'Leary, Ph.D., CPA, CMA, CISA; K.R. Subramanyam, Ph.D.; Charles W. Swenson, Ph.D., CPA*; S. Mark Young, Ph.D.**

*Associate Professors: John J. Barcal, J.D. *, CPA;*

Mingyi Hung, Ph.D.; James G. Manegold, Ph.D.*;*

Mark Soliman, Ph.D.; Robert H. Trezevant, Ph.D.*; Shiing-Wu Wang, Ph.D.**

Assistant Professors: Eric Allen, Ph.D.; Elizabeth Chuk, Ph.D.; David Erkens, Ph.D.; Yuri Loktionov, Ph.D.; Maria Loumioti, DBA; Maria Ogneva, Ph.D.; Mark Soliman, Ph.D., CPA; Marshall Vance, Ph.D.; Jieying Zhang, Ph.D.

Professors of Clinical Accounting: Ruben A. Davila, J.D., MBA, CPA; Chrislynn Freed, MBA, CPA; Merle Hopkins, Ph.D.*; Cecil W. Jackson, CPA, Ph.D.; Joseph L. Keller, M.S., CPA; Rose M. Layton, M.Acc., CPA*; Shirley Maxey, B.A.*; Patricia Mills, J.D., LL.M.; Leslie R. Porter, Ph.D.*; Robert S. Roussey, B.S., CPA; Robert Scharlach, B.S., CPA; Kendall Simmonds, MBA, CPA**

Associate Professor of Clinical Accounting: Robert Kiddoo, MBA, CPA

*Assistant Professors of Clinical Accounting: Robert Shames, MBA, CPA; Zivia Sweeney, MBA, CPA**

Senior Lecturer and Executive in Residence: Thomas P. Ryan, MBA

Emeritus Professors: E. John Larsen, DBA, CPA; Theodore J. Mock, Ph.D.; Anelise N. Mosich, Ph.D., CPA; Zoe-Vonna Palmrose, Ph.D.; Rodolph H. Redmond, J.D.

**Recipient of university-wide or school teaching award.*

Academic Departments**Finance and Business Economics****Bridge Hall 308**

(213) 740-6515

FAX: (213) 740-6650

Email: fbe@usc.edu

marshall.usc.edu/fbe

Chair: Anthony M. Marino, Ph.D.

Faculty

Kenneth King Stonier Chair in Business Administration: Harry DeAngelo, Ph.D.

Ivabelle and Theodore Johnson Chair in Banking and Finance: Wayne Ferson, Ph.D.

Fred V. Keenan Chair in Finance: Lawrence E. Harris, Ph.D.

Robert G. Kirby Chair in Behavioral Finance: Fernando Zapatero, Ph.D.

Charles F. Sexton Chair in American Enterprise: John G. Matsusaka, Ph.D.

James McN. Stancill Chair in Business Administration: Gordon Phillips, Ph.D.

Kenneth L. Trefftz Chair in Finance: Kevin J. Murphy, Ph.D.

Provost Professor of Business, Law and Political Economy: Mathew D. McCubbins, Ph.D.

Charles B. Thornton Professor of Finance: Randolph W. Westerfield, Ph.D.

Professors: Warren G. Bennis, Ph.D.; Ty Callahan, Ph.D.; Tim Campbell, Ph.D.; Harry DeAngelo, Ph.D.*; Wayne Ferson, Ph.D.; Lawrence Harris, Ph.D.; Ayse Imrohoroglu, Ph.D.; Selahattin Imrohoroglu, Ph.D.; Douglas H. Joines, Ph.D.; Anthony M. Marino, Ph.D.; John G. Matsusaka, Ph.D.; Mathew D. McCubbins, Ph.D.; Kevin J. Murphy, Ph.D.; Gordon Phillips, Ph.D.; Vincenzo Quadrini, Ph.D.; Randolph W. Westerfield, Ph.D.; Fernando Zapatero, Ph.D.

Associate Professors: J. Kimball Dietrich, Ph.D.; Richard V. Eastin, Ph.D.*; Yasushi Hamao, Ph.D.; Christopher Jones, Ph.D.; Oguzhan Ozbas, Ph.D.; Aris Protopapadakis, Ph.D.; Mark I. Weinstein, Ph.D.

Assistant Professors: Kenneth Ahern, Ph.D.; Elias Albagli, Ph.D.; Ricardo Alonso, Ph.D.; Odilon Camara, Ph.D.; Daniel Carvalho, Ph.D.; Tom Chang, Ph.D.; Juan Eberhard, Ph.D.; Cary Frydman, Ph.D.; Scott Joslin, Ph.D.; Michael Michaux, Ph.D.; Heikki Rantakari, Ph.D.; Lori Santikian, Ph.D.; David Solomon, Ph.D.; Andrea Stathopoulos, Ph.D.; Selale Tuzel, Ph.D.; Yongxiang Wang, Ph.D.; Yanhui Wu, Ph.D.

Professors of Clinical Finance and Business Economics: Tyrone Callahan, Ph.D.; Baizhu Chen, Ph.D.; C. Kerry Fields, J.D.*; Suh-Pyng Ku, Ph.D.; Lloyd Levitin, J.D.

Associate Professors of Clinical Finance and Business Economics: Duke Bristow, Ph.D.*; James Cunningham, Ph.D.*; Mick Swartz, Ph.D.

Assistant Professors of Clinical Finance and Business Economics: Robert Bridges, MRED; Fatemeh Ibrahim-Nazarian, Ph.D.; Julia Plotts, MBA*; Zekiye Selvil, Ph.D.*

Lecturers: Richard Tontz, Nimfa Bemis, Ph.D., Kevin Fields, J.D.

Emeritus Professors: Guilford C. Babcock, Ph.D.; Henry R. Cheeseman, J.D.; Linda De Angelo, Ph.D.*; Alan C. Shapiro, Ph.D.

**Recipient of university-wide or school teaching award.*

Information and Operations Management

Bridge Hall 401

(213) 740-0172

FAX: (213) 740-7313

Email: iomws@marshall.usc.edu
marshall.usc.edu/iom

Chair: Yehuda Bassok, Ph.D.*

Faculty

Professors: Yehuda Bassok, Ph.D.*; Omar El Sawy, Ph.D.; Gareth James, Ph.D.*; K. Ravi Kumar, Ph.D.*; Ann Majchrzak, Ph.D.; Daniel E. O'Leary, Ph.D.; S. Rajagopalan, Ph.D.*

Associate Professors: Sriram Dasu, Ph.D.*; Mendel Fygenon, Ph.D.*; Ramandeep Randhawa, Ph.D.; Paat Rusmevichientong, Ph.D.; Greys Sosic, Ph.D.;

Amy Ward, Ph.D.; Jonathan S. Yormark, Ph.D.; Leon Zhu, Ph.D.

Assistant Professors: Yingying Fan, Ph.D.; Jinchi Lv, Ph.D.; Hamid Nazerzadeh, Ph.D.; Peter Radchenko, Ph.D.; Wenguang Sun, Ph.D.; Xin Tong, Ph.D.

Professor of Clinical Information and Operations Management: Douglas Shook, Ph.D.*

Associate Professors of Clinical Information and Operations Management: Arif Ansari, Ph.D.*; Dawn Porter, Ph.D.; Ashok Srinivasan, Ph.D.

Assistant Professors of Clinical Information and Operations Management: Murat Bayiz, Ph.D.; Robertas Gabrys, Ph.D.; Hiroshi Ochiuni, Ph.D.

Emeritus Professors: Jack Borsting, Ph.D.; Richard B. Chase, Ph.D.; Delores Conway, Ph.D.*; Richard McBride, Ph.D.; Bert M. Steece, Ph.D.*

**Recipient of university-wide or school teaching award.*

Library and Information Science

Doheny Memorial Library 100

(213) 740-2543

usc.edu/libraries

Dean: Catherine Quinlan, BMUS, MLIS, MBA

Faculty

Associate Professor of Librarianship: William A. Clintworth, M.Lib.; Stephen Hanson, MSLS, M.A.

University Librarian: Jean Crampon, MSLS; Danielle Mihram, Ph.D.

Associate University Librarian: Melinda Hayes, MLS; Deborah Holmes-Wong, MLIS; Marje Schuetze-Coburn, MLS; Eduardo Tinoco, MLIS; Jade Winn, Ed.D., MLIS

Assistant University Librarian: Stephanie Bonjack, M.M., MLIS; Bhagirathi Subrahmanyam, Ph.D.

Management and Organization

Bridge Hall 306

(213) 740-0728

FAX: (213) 740-3582

Email: mordept@marshall.usc.edu
marshall.usc.edu/mor

Chair: Thomas G. Cummings, Ph.D.

Faculty

Harold Quinton Chair in Business Policy: Paul Adler, Ph.D.

Capt. Henry W. Simonsen Chair in Strategic Entrepreneurship: Nandini Rajagopalan, Ph.D.

McAlister Associate Professor of Business Administration: Peer C. Fiss, Ph.D.

University Professor; Distinguished Professor of Business Administration: Warren G. Bennis, Ph.D.

Distinguished Professor of Business: Edward E. Lawler III, Ph.D.

Professors: Paul Adler, Ph.D.; Warren G. Bennis, Ph.D.; Philip H. Birnbaum-More, Ph.D.; John W. Boudreau, Ph.D.; Peter J. Carnevale, Ph.D.; Thomas G. Cummings, Ph.D.; Edward E. Lawler, Ph.D.; Morgan W. McCall, Ph.D.; Nandini Rajagopalan, Ph.D.; Kathleen Reardon, Ph.D.

Associate Professors: Arvind Bhambri, DBA; Peer C. Fiss, Ph.D.*; Peter H. Kim, Ph.D.; Kyle J. Mayer, Ph.D.*

Assistant Professors: Victor M. Bennett, Ph.D.; Nathanael J. Fast, Ph.D.; Nan Jia, Ph.D.; Yongwook Paik, Ph.D.; Sun Hyun Park, Ph.D.; Kelly Patterson, Ph.D.; Cheryl J. Waksak, Ph.D.; Scott S. Wiltermuth, Ph.D.; Qingyuan Lori Yue, Ph.D.

Research Professor: Ken Haycock, Ed.D.

Professors of Clinical Management and Organization: Judith Blumenthal, Ph.D.; Thomas H. Olson, Ph.D.*; Robert B. Turill, Ph.D.; Carl W. Voigt, Ph.D.*; Adlai Wertman, MBA

Associate Professors of Clinical Management and Organization: David M. Carter, MBA; Michael Coombs, Ph.D.*; Terance J. Wolfe, Ph.D.

Assistant Professors of Clinical Management and Organization: Katharine Harrington, Ph.D.; Lucy Hood, MBA

Emeritus Professors: Robert Coffey, Ph.D.; Larry E. Greiner, DBA; Julia Liebeskind, Ph.D.

Marketing

Accounting 306F

(213) 740-5033

FAX: (213) 740-7828

Email: marketing@marshall.usc.edu
marshall.usc.edu/marketing

Chair: Dennis Rook, Ph.D.

Faculty

Joseph A. DeBell Chair in Business Administration: C.W. Park, Ph.D.

Richard and Jarda Hurd Chair in Distribution Management: Gary L. Frazier, DBA*

Jerry and Nancy Neely Chair in American Enterprise: Gerard J. Tellis, Ph.D.

Dave and Jeanne Tappan Chair in Marketing: Shantanu Dutta, Ph.D.

USC Associates Chair in Business Administration: Valerie S. Folkes, Ph.D.

Charles L. and Ramona I. Hilliard Professor of Business Administration: Deborah MacInnis, Ph.D.*

Provost Professor of Psychology and Business: Wendy Wood, Ph.D.

Professors: James G. Ellis, MBA; Valerie S. Folkes, Ph.D.; Gary L. Frazier, DBA*; Shantanu Dutta, Ph.D.; Deborah J. MacInnis, Ph.D.*; C.W. Park, Ph.D.; Gerard Tellis, Ph.D.; Allen Weiss, Ph.D.; Wendy Wood, Ph.D.; Sha Yang, Ph.D.

Associate Professors: Kristin Diehl, Ph.D.; Anthony Dukes, Ph.D.; Dina Mayzlin, Ph.D.; Joseph C. Nunes, Ph.D.*; Joseph Priester, Ph.D.*; Sivaramakrishnan Siddarth, Ph.D.*

Assistant Professors: Lisa Cavanaugh, Ph.D.; B. Kyu Kim, Ph.D.; Lan Luo, Ph.D.*; Matthew Selove, Ph.D.; Gulden Ulkumen, Ph.D.; Botao Yang, Ph.D.

Professors of Clinical Marketing: Diane Badame, Ph.D.*; Rex Kovacevich, MBA*; Dennis Rook, Ph.D.

Associate Professor of Clinical Marketing: Dennis Schorr, Ph.D.

Assistant Professors of Clinical Marketing: Ira Kalb, MBA*; Lars Perner, Ph.D.; Therese Wilbur, MBA*

**Recipient of university-wide or school teaching award.*

Emeritus Faculty

Emeritus Quinton Professor of Research: Olaf K. Helmer, Ph.D.

Emeritus Professors: Douglas Basil, Ph.D.; James D. Calderwood, Ph.D.; Ben M. Enis, Ph.D.; Warren Erickson, Ph.D.; John E. Fleming, DBA; William C. Himstreet, Ed.D.; John Jaeger, Ph.D.; Burt Nanus, Ph.D.; Rodolph H. Redmond, J.D.*; Alan Rowe, Ph.D.; George Schick, Ph.D.; Norman Sigband, Ph.D.; James Stevenson, Ph.D.

Academic Centers

Center for Management Communication

Accounting 400

(213) 740-0627

FAX: (213) 740-9428

Email: cmc@marshall.usc.edu

marshall.usc.edu/mcom

Director: Lucy Lee, Ph.D.*

Faculty

Professors of Clinical Management Communication:

J. Douglas Andrews, Ph.D.; Sandra Chrystal, Ph.D.*; Ellen-Linnea Dipprey, MPW; James Gosline, MPW; Lucy Lee, Ph.D.*; Greg Patton, Ph.D.*

Associate Professors of Clinical Management

Communication: Jolanta Aritz, Ph.D.; Stephen Byars, Ph.D.; Pete Cardon, Ph.D.; Lee Cerling, Ph.D.; Stacy Geck, M.A.; Sharoni Little, Ph.D.*; Daylanne Markwardt, Ph.D.; Donna Miles, M.A.; James Owens, M.A.; Marion Philadelphia, M.A.*; Robyn Walker, Ph.D.; Naomi Warren, Ph.D.*

Assistant Professors of Clinical Management

Communication: Pete Cardon, Ph.D.; Jerry Giaquinta, Ph.D.; Reginald Hubbard, Ph.D.; Yolanda Kirk, M.A.; Kirk Snyder, M.A.

Emeritus Professor: Paul Frommer, Ph.D.

**Recipient of university-wide or school teaching award.*

Lloyd Greif Center for Entrepreneurial Studies

Bridge Hall 1

(213) 740-0641

FAX: (213) 740-2976

Email: entrepreneur@marshall.usc.edu

marshall.usc.edu/entrepreneur

Director: Gene Miller, J.D., MBA

Faculty

Orfalea Director's Chair in Entrepreneurship: Gene Miller, J.D., MBA

Capt. Henry W. Simonsen Chair in Strategic Entrepreneurship: Nandini Rajagopalan, Ph.D.

Professor of Clinical Entrepreneurship: Kathleen R. Allen, Ph.D.*

Associate Professors of Clinical Entrepreneurship: Gene Miller, J.D., MBA; Helena Yli-Renko, SCD

Assistant Professors of Clinical Entrepreneurship: Patrick Henry, MBA*; Thomas Knapp, B.S.*; Steve Mednick, J.D., MBA*

Senior Lecturer in Clinical Entrepreneurship: Andrea Belz, Ph.D.

Emeritus Director: Thomas J. Omalia, MBA*

Emeritus Professor: William H. Crookston, Ph.D.

**Recipient of university-wide or school teaching award.*

Research Centers and Institutes

Center for Effective Organizations

Davidson Conference Center 200

(213) 740-9814

FAX: (213) 740-4354

Email: elawler@marshall.usc.edu

ceo.usc.edu

Director: Edward Lawler, Ph.D.

Center for Global Innovation

Accounting 306E

(213) 740-5033

FAX: (213) 740-7828

Email: innovation@marshall.usc.edu

marshall.usc.edu/cgi

Director: Gerard Tellis, Ph.D.

Global Branding Center

Accounting 306E

(213) 740-5033

FAX: (213) 740-7828

Email: globalbrandingcenter@marshall.usc.edu

marshall.usc.edu/gbc

Director: C.W. Park, Ph.D.

Center for International Business Education and Research (CIBER)

Research Annex, Suite 313

(213) 740-7130

FAX: (213) 740-8538

Email: ciber@usc.edu

marshall.usc.edu/CIBER

Director: Richard Drobnick, Ph.D.

Center for Investment Studies

Accounting 301A

(213) 821-1126

FAX: (213) 740-6650

Director: Suh-Pyng Ku, Ph.D.

Center for Technology Commercialization

Bridge Hall 1

(213) 740-0659

FAX: (213) 740-2976

Email: kallen@marshall.usc.edu

marshall.usc.edu/org/techalliance

Director: Kathleen Allen, Ph.D.

Initiative and Referendum Institute

USC Gould School of Law

(213) 740-9690

Email: gsilsby@law.usc.edu

Executive Director: John Matsusaka, Ph.D.

Institute for Communication Technology

Management (CTM)

3434 South Grand Avenue

(213) 821-2477

FAX: (213) 740-1602

Email: lucy.hood@marshall.usc.edu

marshall.usc.edu/CTM

Executive Director: Lucy Hood, MBA

SEC and Financial Reporting Institute

Accounting 117

(213) 740-4855

FAX: (213) 747-2815

Email: wholder@marshall.usc.edu

Director: William Holder, DBA

Society and Business Lab

Davidson Conference Center 115

(213) 740-3371

FAX: (213) 724-7588

Email: societybusinesslab@marshall.usc.edu

Director: Adlai Wertman, MBA

Sports Business Institute

Citigroup Center

444 S. Flower St., Suite 1000

(213) 740-5591

FAX: (213) 740-3582

Email: David.Carter@marshall.usc.edu

Executive Director: David Carter, MBA

USC Lusk Center for Real Estate

Ralph and Goldy Lewis Hall 331B

(213) 740-5000

FAX: (213) 740-26170

usc.edu/lusk

Director: Richard Green, Ph.D.

Undergraduate Degrees

Bachelor of Science

The business administration major combines a strong grounding in business fundamentals and expertise in select functional areas with extensive exposure to the liberal arts. The curriculum is designed with significant flexibility so that students can complement their studies in business with a minor in a field outside business.

Marshall School programs lead to a Bachelor of Science degree; the most common major is Business Administration. Marshall students may major in Accounting through the Leventhal School of Accounting (part of the Marshall School).

The Marshall School offers two joint programs: the program with the School of Cinematic Arts leads to a B.S. in Business Administration with an emphasis in Cinematic Arts; and the program with the School of International Relations leads to a B.S. in Business Administration with an emphasis in International Relations. The Marshall School and USC Viterbi School of Engineering offer a combined degree program leading to a B.S. in Business Administration/Computer Science; this degree is administered by the Viterbi School of Engineering. Students in the B.S. in Business Administration (World Program) earn bachelor's degrees from USC, Hong Kong University of Science and Technology (HKUST) and Bocconi University (Milan, Italy). The Marshall School also offers a variety of minors for non-business students.

Admission

Students may be admitted to the program as incoming freshmen, as students transferring from another college or university, or as USC undergraduates transferring from another major. Admission to the Marshall School requires admission to the university and depends on academic performance, particularly in quantitative areas. USC students who have not been admitted to the major or a minor in the Marshall School may complete a maximum of 12 units from the Marshall School and/or the Leventhal School. Information and guidelines for students applying to USC Marshall as freshmen and those transferring to USC from another university are available at the USC Undergraduate Admission and USC Marshall Undergraduate Admissions Websites; information and guidelines for USC undergraduates who wish to transfer to Marshall from another major at USC can be found on the Marshall Undergraduate Advising Website.

Degree Requirements

Educational Objectives

The undergraduate programs in business administration have three main goals: (1) graduates will have a grounding in skills and concepts that are fundamental to business; (2) graduates will have deep expertise in one or more specific areas of business, selected according to the student's personal and professional goals and objectives; and (3) graduates will have extensive exposure to the liberal arts, usually with a formal minor in a field outside business.

USC Core Requirements

All undergraduates take the USC Core, comprising general education, the writing program and the diversity

requirement. The general education program requires six courses in different categories. The writing program requires two courses, WRIT 140 and WRIT 340. The diversity requirement is met by passing any course with the "m" designation. See page xx and page xx for more information.

Business Core Requirements

Business Administration majors must complete the business core. The business core contains foundational courses that provide analytical skills and theoretical knowledge in math, statistics, accounting and economics; functional courses in business disciplines such as finance, marketing and operations; and integrative courses in strategy and data analysis.

BUSINESS CORE COURSES		UNITS
BUAD 285ab	Accounting Fundamentals, Financial and Managerial Accounting (4-2), or	
BUAD 286ab	Accounting Fundamentals, Managerial and Financial Accounting (4-2)	6
BUAD 302	Communication Strategy in Business	4
BUAD 304	Leading Organizations	4
BUAD 306	Business Finance	4
BUAD 307	Marketing Fundamentals	4
BUAD 310	Applied Business Statistics	4
BUAD 311	Operations Management	4
BUAD 425	Data Analysis for Decision Making	2
BUAD 497	Strategic Management	4
ECON 351x	Microeconomics for Business	4
ECON 352x	Macroeconomics for Business	4
MATH 118x*	Fundamental Principles of the Calculus, or	
MATH 125**	Calculus I	4

**Placement into MATH 118x is contingent on successful completion of MATH 117 or obtaining an acceptable score on the math placement exam or AP calculus or IB mathematics exam. The MATH 118x requirement may be waived with an AP Calculus AB or BC score of 4 or higher or an IB math score of 5 or higher.*

***A-level mathematics examination scores of A or B may receive subject credit for MATH 125. Eligible students should speak with their academic advisers for additional information.*

Business Electives Requirement

In addition to business core courses, students are required to gain a deeper understanding of a specific aspect of business in which they have an interest. Business administration majors must complete 12 units of upper-division elective courses (typically three 4-unit courses) offered by the Marshall School, specifically 300- or 400-level courses with a prefix ACCT, BAEP, BUCO, FBE, FIM, IOM, MKT or MOR. Students can also satisfy the business electives requirement through participation in a Marshall School sponsored international exchange program.

Electives should be selected based on a student's personal and professional goals and in consultation

with an academic adviser. The Marshall School's academic departments and centers can help students select courses that are particularly useful for careers in fields covered by the department or center. Electives are normally clustered in a particular field, but may be spread across different fields.

Additional Requirements

Sixty units of non-business course work are required for any of the undergraduate degrees conferred by the Marshall School of Business.

A maximum of 24 units of undergraduate course work may be taken pass/no pass and used toward the B.S. degree in Business Administration. However, MATH 118x, WRIT 140, WRIT 340, ECON 351x, ECON 352x and all courses required for the major must be taken for a letter grade.

In addition to meeting university GPA requirements, a minimum overall/cumulative grade point average of 2.0 (A = 4.0) in upper-division business courses is required for graduation.

Free Electives

The business curriculum allows for 32 units of free electives. Students are strongly encouraged to pursue a minor, study a language and/or take advantage of the university's many opportunities to study abroad.

Minors

USC offers more than 150 minors, spanning a wide variety of fields. The business curriculum is designed to allow every student enough flexibility to pursue a minor outside of business, in the belief that a strong undergraduate education must be well-rounded and incorporate the liberal arts as well as business classes. Minors allow students to gain substantial expertise in a field outside of business by taking classes in another of USC's top-ranked departments and schools. Students with an officially declared minor may apply for the honor of being named a Renaissance Scholar if they meet the other program conditions.

Because some classes required for particular minors may have limited availability, students are encouraged to work closely with their academic advisers to develop plans for their minors. The Marshall Office of Undergraduate Advising can help plan for minors and provide information on the various minors offered throughout the university and how they complement different business tracks.

Marshall School Academic Departments and Centers

The Marshall School's academic departments and centers listed and described below can help students select courses that are particularly useful for careers in the fields covered by the department or center.

Center for Management Communication

The center offers classes in a variety of topics relating to communication in organizations, ethics, business presentations, business writing, interpersonal interactions, group processes and teamwork, persuasion and leadership. The importance of effective communication

to the success of business leaders and organizations has increased exponentially in the age of globalization, the Internet and instant media reporting that takes business news to the world in seconds. Communication theory, practice and skills will help students advance themselves and their organizations regardless of their positions or industries. Business leaders at all levels need the ability to communicate strategically in times of crisis or calm.

Department of Finance and Business Economics

The department offers classes in the fields of finance, business economics, business law and real estate. Subjects include microeconomics, macroeconomics, economic forecasting, corporate finance, investments and valuation, financial institutions and markets, risk management, and real estate finance, among others. These subjects are important for business planning and consulting, evaluation of capital investments and corporate strategies, and securities investment analysis, advising and trading.

Department of Information and Operations Management

The department offers classes in operations management, statistics and information systems. These three areas are critical to the success of any firm in a globalized economy: technology and information management, gathering and understanding data, and effective management of day-to-day operations. Students learn to leverage technology and information systems to gather critical market data on a global basis; use statistics to turn this data into critical forecasts and competitive analysis; and manage projects with international teams, develop innovative products, and skillfully manage the creation and delivery of goods and services to anywhere on the globe. Career opportunities in these areas include consulting, product development, supply chain management, global marketing and manufacturing. Course work in this department is especially important to students interested in one day running their own companies.

Department of Management and Organization

The department offers classes in human resources, negotiations, organizational behavior and management strategy. The management function is concerned with setting corporate strategy to gain competitive advantage in a dynamic, global environment; designing the organization to implement the strategy; and leading organizational members to achieve strategic objectives. In carrying out their responsibilities, managers must balance the demands of the competitive environment with the resources and capabilities inside the organization. The department's classes help students learn how to be effective managers by developing skills in team building, decision-making, strategy formulation, organizational design, motivating employees and human resource development.

Department of Marketing

Marketing is the process of planning and executing the conception, pricing, promotion and distribution of ideas, goods and services to create exchanges that satisfy individual and organizational objectives. Modern marketing stresses research and analysis to understand

consumer behavior and to identify customer needs, new product research and development, competitive pricing, coordinated promotional or sales programs, and efficient logistics and distribution. Students interested in careers in marketing management, logistics management, retailing or wholesaling, sales program administration, advertising or marketing research will find courses in marketing valuable.

Lloyd Greif Center for Entrepreneurial Studies

The Greif Center offers a multiclass entrepreneur program designed for students who want to start or own a high-growth business, join an emerging business or participate in an entrepreneurial venture in a mature corporation (intrapreneurship). The overall goals of the program are to open students' minds to the advantages of entrepreneurial thinking, to instill confidence that they can be successful entrepreneurs, to increase their awareness of the entrepreneurial process and to enhance their conceptual skills to take advantage of business opportunities. Wide exposure is given to all types of entrepreneurs and industries. The program actively supplies contact with and support to its alumni. The program is designed to teach relevant concepts and theory, to develop conceptual ability and to let the student experience what is being taught. A significant part of the program is each student's development of the skill sets for success. Applications for admission to this program are mandatory and must be completed at the start of the spring semester of the junior year.

Leventhal School of Accounting

The Leventhal School offers classes in accounting information systems, financial accounting, managerial accounting and tax accounting. The Leventhal School also offers a Bachelor of Science degree in Accounting. See page xx for a complete listing of information regarding courses, programs and requirements.

International Studies

The Marshall School offers students a variety of opportunities to cultivate a global mind. Classes like international trade and commercial policy, financial management of multinational corporations, international finance, multinational marketing, and international management practices and negotiation broaden students' understanding of managing a global business. Opportunities to travel and study outside the United States allow students to develop skills for functioning in different cultures, societies and economic environments, and to understand a wide variety of international business practices. Contact the offices of Undergraduate Student Services or Undergraduate Advising for information about international study opportunities at Marshall, including:

GLP/LINC

All first-year students are encouraged to enroll in one of Marshall's international experiential learning programs, GLP or LINC. Each includes a 10-day faculty-led trip to a city outside the United States, where students meet with business, political and civic leaders. The Learning about International Commerce (LINC) Program is a 2-unit class open to freshman students who apply. The Global Leadership Program (GLP) is a two-course sequence open by invitation to select first-year students

in the incoming freshman class. GLP invitations are extended by the USC Marshall Undergraduate Admissions Office.

International Exchange Program

The international exchange program is a one-semester exchange program with a host institution in Asia, Australia or Europe during either the fall or spring semester. Exposure to international cultures and practices in business and non-business settings provides another level of understanding of international business. Students complete between four to eight courses at the host institution (15–18 USC units). All instruction is in English, so foreign language proficiency is not required. Courses completed at the host school are graded credit/no credit on the student's USC transcript. The courses are selected from a list approved by the Marshall School of Business and satisfy the business elective requirement.

International Summer Program

The Marshall School offers unpaid international internship programs in London, Madrid, Dublin, Sydney, New Delhi, Milan and Singapore during the summer session. The program provides students with theoretical and practical experiences working and navigating within the international global environment. The program consists of an eight-week internship abroad. In addition, unpaid social entrepreneurship internships are offered in Kenya, South Africa, Rwanda and Ghana. Paid internships in Bangkok and Jakarta are also offered.

Research Opportunities for Undergraduates

BUAD 490x Directed Research provides an opportunity to pursue research above and beyond the normal course offerings. This course is open to juniors and seniors with a 3.0 or better grade point average who have obtained approval from a faculty sponsor, the department chair and the Office of Academic Advising by the semester prior to enrollment. Units are assigned on a variable basis with a maximum of 12 units toward an undergraduate degree, 4 units per semester.

Students may also work with faculty as research assistants. Research opportunities are made available through various departments at Marshall and through the university's undergraduate research program found at usc.edu/ugresearch.

Marshall Honors

Marshall Honors, available upon graduation to majors in business administration or accounting, provides a special designation of departmental honors on a student's transcript. Acceptance to the program requires completion of at least 64 units of course work (including transfer units), a GPA of 3.5 or higher in course work to be applied to the major, an application, and a successful interview with the director of the program. Achievement of Marshall Honors requires completion of BUAD 493 Marshall Honors Research Seminar (4 units) prior to the senior year, a thesis (research project and paper) conducted under the guidance of a Marshall faculty member during the senior year, and a minimum GPA of at least 3.5 in upper-division Marshall School and Leventhal School courses applied to the major. For additional information, contact the Office of Undergraduate Advising, BRI 104, (213) 740-0690.

Marshall Undergraduate Academic Advising

Academic advisement is provided through the Office of Undergraduate Advising located in Bridge Hall 104, (213) 740-0690 or undergrad.advising@marshall.usc.edu. Incoming freshman and new transfer students are required to meet with an academic adviser before registering, and this requirement will be in effect until 24 USC units are completed. All students are encouraged to see an academic adviser on a regular basis, and continuing Marshall students may schedule appointments throughout the year.

Registration

Students may register for business courses directly using the Web registration system, according to their scheduled appointment times. Appointment times are based on number of units completed. For example, seniors have the first opportunity to register for a course. It is important to register as soon as one's appointment allows or priority standing will be lost.

Marshall Undergraduate Student Services

The Marshall School recognizes the importance of integrating education with experience. The Undergraduate Student Services Office located in HOH 200, in cooperation with the USC Career Center, assists business school undergraduates with securing externships, internships and full time positions. Moreover, this office provides students with career support and access to alumni. Students who actively participate in these programs maximize their opportunities for professional development and employment after graduation.

In addition to these programs, students are encouraged to participate in student organizations to build leadership, teamwork and networking skills. The Marshall School has more than 35 student organizations. USC has more than 700 student organizations.

The Student Services Office also offers over 32 international exchange programs in Asia, Australia and Europe. Through these programs, students spend a semester overseas and fulfill business elective requirements. The office also coordinates international summer internship programs and week-long international travel opportunities. For further information, contact Marshall Undergraduate Student Services, (213) 740-5705 or send an email to studentservices@marshall.usc.edu.

Honor Societies

Beta Gamma Sigma is the national honor society for business students. The Marshall School of Business chapter has been active since 1923. Juniors in the top five percent of the class and seniors in the top 10 percent of the class are invited to join. For further information, contact the Office of Undergraduate Advising.

Transferring College Credit

Community College Courses

USC has established articulation agreements with most community colleges in California. Most academic courses are acceptable for transfer credit from a two-year school, but students will not receive credit for remedial course work. Courses that do not appear on the articulation agreement are not transferable. A maximum of 64 semester units may be transferred. There are university restrictions that apply to transferring course work from other institutions that may affect the

above rule. Check with the Degree Progress Department (JHH 010) for information about transferable courses. Prospective Marshall students should contact the USC Admissions Office. Continuing Marshall students should speak with an adviser in the Office of Undergraduate Advising.

Official transcripts of college work taken elsewhere must be submitted at the time of application to the USC Office of Admission. A credit evaluation will be completed that will list transfer courses accepted for credit. All business courses completed at a two year college, if transferable, will be considered elective credit. There is one exception to this policy: Students may transfer two semesters of introductory accounting and receive credit equivalent to one semester of introductory accounting at USC. Then students can register for BUAD 305 Abridged Core Concepts of Accounting Information.

Four Year Colleges

Most courses of an academic nature are acceptable for unit credit from all fully accredited four year institutions. If they do not satisfy specific subject requirements at USC, they will usually be accepted for elective course credit.

Students are urged to complete all their required business courses at USC. ECON 351x and ECON 352x must be completed at USC. All business courses from four year institutions, if transferable, will be considered elective credit unless a challenge examination is passed. All upper division core classes, with the exception of BUAD 497 Strategic Management and BUAD 425 Data Analysis for Decision Making, may be challenged. Students should consult with their academic advisers to initiate the challenge examination process.

Bachelor of Science in Business Administration (World Program)

The World Bachelor in Business (WBB) Program offers students the opportunity for immersive study at three highly regarded business schools, one in each of the major economic/cultural zones of the world: the Americas, Asia and Europe. The program is designed and offered in cooperation with the Hong Kong University of Science and Technology (HKUST) and Bocconi University. Students spend at least one year at each campus and receive a degree from each university. The program is available to entering freshmen only. Prospective students should consult with the USC Marshall Undergraduate Admissions office for program and admissions information.

Requirements for Completion

To complete the program and receive a degree from each university, students must satisfy the degree requirements of each institution, which include language requirements. The USC degree requirements are those of the USC Marshall Bachelor of Science in Business Administration program, with the exception that WBB students do not need to complete 60 units of non-business course work. Students should consult with the WBB program academic adviser at each university. Specific courses completed at each university are used to fulfill specific requirements at the other universities.

Students should note the following USC degree requirements for the WBB program:

- A minimum of 32 units must be taken in residence at USC. The units applied toward this requirement must be taken for a letter grade and cannot be taken on a P/NP or CR/NC basis.
- In addition to meeting university GPA requirements, a minimum grade of C- must be earned on all upper division course work taken at USC and required for the major.
- A minimum grade of C- for course work completed at HKUST and Bocconi University must be earned for the course credits to transfer to USC.
- USC GPA calculations will be based on course work completed at USC.

Sample Program

WBB students spend the first year taking classes in Los Angeles at USC, the second year taking classes in Hong Kong at HKUST and the third year taking classes in Milan at Bocconi University. In the final year, students choose their location of study in consultation with the program directors. Each year includes at least one cohort class designed specifically for the WBB program.

The following sample program does not represent a required sequence of study; rather, it serves as a guideline. Students will meet with a WBB program academic adviser at each location to ensure that each student's program of study will fulfill WBB program requirements.

YEAR ONE — USC		UNITS
Semester one		
BUAD 304	Leading Organizations	4
GE VI*	Social Issues	4
MATH 118x	Fundamental Principles of the Calculus	4
WRIT 140	Writing and Critical Reasoning	4
Semester two		
BUAD 104x	Learning About International Commerce	2
ECON 351x	Microeconomics for Business	4
GE IV	Science and Its Significance	4
GE V	Arts and Letters	4
WRIT 340	Advanced Writing	4
Total		34

*Students should choose an 'm' designated class for GE VI to fulfill the diversity requirement.

YEAR TWO — HKUST		UNITS
Semester one		
ECON 2123	Macroeconomics	3
ECON 2174	Mathematics for Economists	4
HLTH 1010	Healthy Lifestyle	0
USC GE III	Scientific Inquiry [HKUST: Science and Technology]	3
Chinese Communications		3
Understanding Business in Asia		2
Semester two		
ACCT 2010	Principles of Accounting I	3
ISOM 2010	Introduction to Information Systems	3
ISOM 2500	Business Statistics	3
ISOM 2700	Operations Management	3

USC GE II Global Cultures and Traditions [HKUST: Humanities]			Semester two			CINEMATIC ARTS REQUIREMENTS		UNITS
Seminars in Asia's Business		1	30058	Comparative Business and European Law	4	CNTV 463	Television: Integrating Creative and Business Objectives	2
Total		31	30216	Social Responsibility in Business, Government and Non-Profit	3	CNTV 467	The Future of Digital Media and the Entertainment Industry	2
YEAR THREE — BOCCONI			Final report			CNTV 495	Internship in Cinematic Arts	2
Semester one			Free electives			CTCS 190	Introduction to Cinema	4
30006	Financial Markets and Institutions	3	Total			CTCS 191	Introduction to Television and Video	4
30015	Marketing	3	Total units: 128			CTIN 458	Business and Management of Games	2
30017	Corporate Finance	3	Bachelor of Science in Business Administration (Cinematic Arts)			CTPR 385	Colloquium: Motion Picture Production Techniques	4
30047	Introduction to the Legal System I	3	This program consists of courses offered by both the Marshall School and the School of Cinematic Arts. Students completing the program receive a Bachelor of Science in Business Administration with an emphasis in Cinematic Arts. The program is available to entering freshmen only.			CTPR 410	The Movie Business: From Story Concept to Exhibition	2
30152	Public Management	3	Requirements for Completion			CTPR 460	Film Business Procedures and Distribution	2
Semester two			To complete the program, students must satisfy all requirements for the Bachelor of Science degree in business as well as an additional 24 units in cinematic arts, which specifically address the business side of the industry.			Total cinematic arts units		24
30007	Managerial Accounting	3				Total program units: 84		
30048	Introduction to the Legal System II	3				Bachelor of Science in Computer Science/Business Administration		
30056	European Economic Policy	3				This combined program offers qualified students the opportunity to gain an educational foundation in both computer science and business administration. Students must meet the admission requirements for both programs. The degree is administered by the USC Viterbi School of Engineering; see Computer Science, page xx, for complete degree requirements.		
USC GE I	Western Cultures and Traditions [Bocconi Economic History requirement]	3				Bachelor of Science in Business Administration (International Relations)		
Doing Business in Europe		1				This program consists of courses offered by both the Marshall School of Business and the School of International Relations. Students completing the program receive a Bachelor of Science in Business Administration with an emphasis in International Relations.		
Language 2		3				Requirements for Completion		
Total		31				To complete the program, students must satisfy all requirements for the Bachelor of Science degree in business as well as an additional 24 units in international relations from the courses listed below.		
YEAR FOUR, OPTION ONE — USC			BUSINESS REQUIREMENTS			BUSINESS REQUIREMENTS		UNITS
Semester one			BUAD 285ab	Accounting Fundamentals, Financial and Managerial Accounting (4-2), or		BUAD 285ab	Accounting Fundamentals, Financial and Managerial Accounting (4-2), or	
BUAD 302	Communication Strategy in Business	4	BUAD 286ab	Accounting Fundamentals, Managerial and Financial Accounting (4-2)	6	BUAD 286ab	Accounting Fundamentals, Managerial and Financial Accounting (4-2)	6
BUAD 497	Strategic Management	4	BUAD 302	Communication Strategy in Business	4	BUAD 302	Communication Strategy in Business	4
MOR 421	Social and Ethical Issues in Business	4	BUAD 304	Leading Organizations	4	BUAD 304	Leading Organizations	4
Free electives		4	BUAD 306	Business Finance	4	BUAD 306	Business Finance	4
Semester two			BUAD 307	Marketing Fundamentals	4	BUAD 307	Marketing Fundamentals	4
BUAD 425	Data Analysis for Decision Making	2	BUAD 310	Applied Business Statistics	4	BUAD 310	Applied Business Statistics	4
BUAD 490x	Directed Research	2	BUAD 311	Operations Management	4	BUAD 311	Operations Management	4
FBE 403	Introduction to the Legal Environment of Business	4	BUAD 425	Data Analysis for Decision Making	2	BUAD 425	Data Analysis for Decision Making	2
Free electives		8	BUAD 497	Strategic Management	4	BUAD 497	Strategic Management	4
Total		32	ECON 351x	Microeconomics for Business	4	ECON 351x	Microeconomics for Business	4
YEAR FOUR, OPTION TWO — HKUST			ECON 352x	Macroeconomics for Business	4	ECON 352x	Macroeconomics for Business	4
Semester one			MATH 118x*	Fundamental Principles of the Calculus, or		MATH 118x*	Fundamental Principles of the Calculus, or	
MGMT 4110	Business Ethics and Policy	4	MATH 125**	Calculus I	4	MATH 125**	Calculus I	4
MGMT 4210	Corporate Strategy	4	Electives	Business 300- or 400-level ACCT, BAEP, non-core BUAD, BUAD, FBE, IOM, MKT or MOR	12			
Best Practices in Corporate Communication		3	Total business units			60		
Free electives		6	<i>*Placement into MATH 118x is contingent on successful completion of MATH 117 or obtaining an acceptable score on the math placement exam or AP calculus or IB mathematics exam. The MATH 118x requirement may be waived with an AP Calculus AB or BC score of 4 or higher, or an IB math score of 5 or higher.</i>			<i>**A-level mathematics examination scores of A or B may receive subject credit for MATH 125. Eligible students should speak with their academic adviser for additional information.</i>		
Semester two								
ACCT 3610	Functions of Law in Society and Business	3						
Capstone project		4						
Free electives		8						
Total		32						
YEAR FOUR, OPTION THREE — BOCCONI								
Semester one								
30012	Business Strategy	4						
30223	Marketing Communication	3						
Free electives		9						

Electives	300- or 400-level ACCT, BAEP, non-core BUAD, BUCO, FBE, IOM, MKT or MOR	12
Total business units		60

*Placement into MATH 118x is contingent on successful completion of MATH 117 or obtaining an acceptable score on the math placement exam or AP calculus or IB mathematics exam. The MATH 118x requirement may be waived with an AP Calculus AB or BC score of 4 or higher, or an IB math score of 5 or higher.

**A-level mathematics examination scores of A or B may receive subject credit for MATH 125. Eligible students should speak with their academic adviser for additional information.

INTERNATIONAL RELATIONS REQUIREMENTS		UNITS
IR 210	International Relations: Introductory Analysis	4
<i>International Political Economy Courses (4 units)</i>		
Choose one:		
IR 324	Multinational Enterprises and World Politics	4
IR 325	Rich and Poor States in the World Political Economy	4
IR 326	U.S. Foreign Economic Policy	4
IR 330	Politics of the World Economy	4

International Relations Regional Courses (8 units)

Choose two:

IR 333	China in International Affairs	4
IR 345	Russian and Soviet Foreign Policy	4
IR 360	International Relations of the Pacific Rim	4
IR 361	South and Southeast Asia in International Affairs	4
IR 362	The International Relations of the Contemporary Middle East	4
IR 363	Middle East Political Economy	4
IR 364	International Relations of the Middle East: 1914–1950	4
IR 365	U.S. Responses to Revolutionary Change in Latin America and the Caribbean	4
IR 367	Africa in International Affairs	4
IR 369	Contemporary European International Relations	4
IR 383	Third World Negotiations	4
IR 385	European Foreign Policy and Security Issues	4
IR 439	Political Economy of Russia and Eurasia	4
IR 442	Japanese Foreign Policy	4
IR 465	Contemporary Issues in United States-Latin American Relations	4
IR 468	European Integration	4

International Relations Electives (8 units)

Choose two from the list below or the two lists immediately above:

IR 305	Managing New Global Challenges	4
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IR 306	International Organizations	4
IR 310	Introduction to Peace and Conflict Studies	4
IR 315	Ethnicity and Nationalism in World Politics	4
IR 316	Gender and Global Issues	4
IR 323	Politics of Global Environment	4
IR 327	International Negotiation	4
IR 341	Foreign Policy Analysis	4
IR 344	Developing Countries in World Politics	4
IR 381	Introduction to International Security	4
IR 382	Order and Disorder in Global Affairs	4
IR 402	Theories of War	4
IR 427	Seminar on Economics and Security	4
IR 444	Issues and Theories in Global Society	4
IR 483	War and Diplomacy: The U.S. in World Affairs	4
Total international relations units		24
Total program units: 84		

Food Industry Management Concentrated Program Certificate Program

The Food Industry Management Concentrated Program offers undergraduate and graduate courses emphasizing marketing, retailing, financial and management aspects of the food industry. Completion of the program is acknowledged by a Food Industry Management Certificate.

To qualify for admission and a scholarship grant for the undergraduate food industry management concentrated program, students must be currently employed in a management position in the food retailing, wholesaling or manufacturing industry; be recommended by their employer; and be in their junior or senior year with an academic standing adequate for admission to USC.

To receive a certificate, students must complete 16 units during the one-semester program. Students must take all required FIM courses for the time they are in the program.

SPRING SEMESTER		UNITS
FIM 420	Food Retailing Management	4
FIM 480	Food Industry Financial Accounting and Analysis	4
FIM 481	Food Marketing Research	4
FIM 582	Food Industry Decision Making	4
		16

Minor Programs

Minor in Business

A minor in business is available to students in all schools and departments except the Marshall School of Business and the Leventhal School of Accounting. The minor provides the opportunity for students to gain understanding of key concepts and tools of business. To enroll in the business minor, students must have completed a minimum of 32 units of college-level courses and attained a minimum overall GPA of 2.75.

Successful completion of the business minor requires at least 16 units of upper division course work with a minimum cumulative GPA of 2.0 in the courses applied to the minor:

MINOR COURSE REQUIREMENTS		UNITS
Choose one of the following five options:		2-8
BUAD 200x*	Economic Foundations for Business (2), or	
BUAD 201x	Introduction to Business for Non-Majors (4), or	
ECON 203	Principles of Microeconomics (4), and	
ECON 205	Principles of Macroeconomics (4), or	
ECON 303	Intermediate Microeconomic Theory (4), and	
ECON 305	Intermediate Macroeconomic Theory (4), or	
ECON 351x	Microeconomics for Business (4), and	
ECON 352x	Macroeconomics for Business (4)	

Required:

ACCT 410x	Foundations of Accounting, or	
BUAD 285a	Accounting Fundamentals, Financial and Managerial Accounting, or	
BUAD 305	Abridged Core Concepts of Accounting Information	4
BUAD 215x**	Foundations of Business Finance, or	
BUAD 306	Business Finance	4
BUAD 302	Communication Strategy in Business	4
BUAD 304	Leading Organizations	4
BUAD 307	Marketing Fundamentals	4
BUAD 315x	Basics of Project and Operations Management for Non-Majors (2), or	
BUAD 311	Operations Management (4)	2-4

*Students who have earned scores of 4 or 5 on both the AP Microeconomics and the AP Macroeconomics exams will be waived out of the first requirement (BUAD 200x, BUAD 201x or ECON).

**ACCT 410x or BUAD 285a or BUAD 305 must be taken before BUAD 215x.

Minor in Accounting

A minor in accounting is available to students in all schools and departments except the Marshall School of Business. See page xx for program requirements.

Minor in Advertising

The Marshall School and the School of Journalism jointly offer a 24-unit advertising minor for students interested in building a career in or developing a better understanding of the field of advertising. Through this program of study, students explore the key role played by advertising in today's global economy. At no time has advertising been more successful or more controversial than it is today, and this program will explore both the positives and the negatives.

Emphasis is placed on both the practical skills required to meet the demands of the marketplace and the theoretical underpinnings of those practices. Program content includes: the history of advertising; creation of written and visual advertising elements; the measurement, selection and analysis of media; the concept of "branding"; the role of advertising in creating and maintaining successful brands; the analysis of advertising campaign case studies; and the creation of integrated marketing communications campaigns. See the School of Journalism, page xx, for course requirements.

Minor in Biotechnology

The Marshall School and the departments of biological sciences and chemistry in the USC Dornsife College of Letters, Arts and Sciences jointly offer the minor in biotechnology. This minor brings essential knowledge in the basic sciences together with the corporate skills needed in a rapidly growing industry. The minor is especially well suited for the business, biology, chemistry or engineering student seeking a career in business and/or the biomedical/bio-technical sciences. Refer to Biological Sciences, page xx, for a list of required courses.

Minor in Business Economics

This minor is available to students of all majors except business, accounting and economics. This minor teaches students to think strategically about business. It integrates economic ideas with practical applications in the real world. Students who minor in business economics learn to think like leaders in business firms. This minor approaches problems conceptually, proceeding from the general economic theories to specific real-world applications. This gives students a higher level of understanding of business opportunities and problems.

Many students in disciplines other than business need economic skills that focus on business. This minor teaches a combination of the ideas, skill sets and methodological approaches used in business economics. Students develop economic reasoning skills related to real-world problems and opportunities.

To enroll, students must have completed a minimum of 32 units of college-level course work and have a minimum overall GPA of at least 2.75. Completion of this minor requires a minimum GPA of 2.0 for the 20 units applied to the minor.

REQUIRED COURSES (12 UNITS)		UNITS
MATH 118X	Fundamental Principles of the Calculus	4
ECON 351X	Microeconomics for Business	4
ECON 352X	Macroeconomics for Business	4
<i>Electives</i>		
Choose two from the list below:		
FBE 324	The Financial System	4
FBE 402	Government and Business	4
FBE 416*	Managerial Economics	4
FBE 443*	Introduction to Forecasting and Risk Analysis	4
FBE 445	Topics in Economic Analysis of Business Strategy and Policy	4
FBE 462	International Trade and Commercial Policy	4

*Prerequisite required

Minor in Business Finance

The minor in business finance offers non-business/non-accounting majors an opportunity to expand their career opportunities by gaining a background in financial concepts, valuation and financial strategy. It provides students with the necessary tools to measure benefits and related costs that will enable them to make better business decisions. Problem-solving and quantitative skills that are widely used in business will enable students to work on special projects or management teams — opportunities that might not have been available had it not been for this minor. Eighteen units are required.

To enroll students must have completed a minimum of 32 units of college-level course work and have a minimum overall GPA of at least 2.75. Completion of this minor requires a minimum of 16 upper-division units in the minor and a GPA of 2.00 for the 18 units applied to the minor. Individuals in some majors who take 200-level courses to satisfy major requirements may be required to take additional electives to achieve the 16-unit upper-division minimum.

REQUIRED COURSES		UNITS
<i>Economics</i>		
Choose one of the following five options:		2-8
BUAD 200X*	Economic Foundations for Business (2), or	
BUAD 201X	Introduction to Business for Non-Majors (4), or	
ECON 203	Principles of Microeconomics (4), and	
ECON 205	Principles of Macroeconomics (4), or	
ECON 303	Intermediate Microeconomic Theory (4), and	
ECON 305	Intermediate Macroeconomic Theory (4), or	
ECON 351X	Microeconomics for Business (4), and	
ECON 352X	Macroeconomics for Business (4)	
<i>Accounting</i>		
Choose one course (4 units):		
ACCT 410X**	Foundations of Accounting	4
BUAD 285a	Accounting Fundamentals, Financial and Managerial Accounting	4
BUAD 305	Abridged Core Concepts of Accounting Information	4
<i>Finance</i>		
Choose one course (4 units):		
BUAD 215X	Foundations of Business Finance	4
BUAD 306**	Business Finance	4
<i>Electives</i>		
Choose two from the list below:		
FBE 421	Financial Analysis and Valuation	4
FBE 423	Introduction to Venture Capital and Private Equity	4
FBE 425	Management of Financial Institutions	4

FBE 431	Financial Policies and Corporate Governance	4
FBE 432	Corporate Financial Strategy	4
FBE 433	Corporate Governance and CEO Pay	4
FBE 435	Applied Finance in Fixed Income Securities	4
FBE 436	Financial Management of Multinational Corporations	4
FBE 437	Entrepreneurial Finance: Financial Management for Developing Firms	4
FBE 440	Trading and Exchanges	4
FBE 441	Investments	4
FBE 458	Law, Finance and Ethics	4
FBE 459	Financial Derivatives	4
FBE 460	Mergers, Acquisitions and Restructuring	4
FBE 464**	International Finance	4

*Students who have earned scores of 4 or 5 on both the AP Microeconomics and the AP Macroeconomics exams will be waived out of the first requirement (BUAD 200X, BUAD 201X or ECON).

**Prerequisite or corequisite required

Minor in Business Law

A minor in business law is available to students in all schools and departments except business majors. The minor in business law will provide students with practical legal knowledge of substantive business law topics and current legal issues. The minor provides skill sets to identify and manage issues encountered within personal and business contexts including litigation, contract law, employment and human resources, real and personal property law. This minor exposes students to such topics as: commercial transactions, constitutional law, Internet and online commerce; intellectual property and entertainment law; bankruptcy and securities law; law of business and non-profit organizations; and international law. It also prepares students for career opportunities in management, technology and politics. The minor is an excellent preparation for further legal education. To enroll, students must have completed a minimum of 32 units of college-level course work and have a minimum overall GPA of at least 2.75.

REQUIRED COURSES		UNITS
FBE 403	Introduction to the Legal Environment of Business	4
FBE 458	Law, Finance and Ethics	4
Choose two of the following:		
FBE 427	Real Estate Law	4
FBE 428	Principles of Employment Law	4
FBE 429	International Business Law	4
FBE 430	Online Commerce and Intellectual Property	4

Minor in Business Technology Fusion

The minor in business technology fusion is available to students in all schools and departments except business majors. This minor requires 20 units to complete. To enroll, students must have completed a minimum of 32 units of college-level course work and have a minimum overall GPA of at least 2.75. Students must complete an application for the minor. This form can

be obtained from the Marshall Undergraduate Advising Office.

COURSE REQUIREMENTS		UNITS
IOM 431	Managing the Digital Revolution for Your Business	4
IOM 433	Business Information Systems Analysis and Design	4
IOM 435	Business Database Systems	4

Electives

Choose from the following to achieve a total of at least 8 units:

IOM 401	Business Information Systems — Spreadsheet Applications	2
IOM 402	Business Information Systems — Database Applications	2
IOM 443	The Business of Interactive Digital Media	4
IOM 455	Project Management	4
IOM 462	Managing a Small Business on the Internet	2

Minor in Consumer Behavior

This interdisciplinary minor explores consumer thinking from the perspectives of psychology, marketing, economics, anthropology, sociology and other departments interested in popular culture. Why do people form the attitudes and impressions they do? How do individual factors, culture, mass media, economics and social trends influence people's decisions?

As with all minors, students must include at least four upper-division courses and four courses dedicated exclusively to this minor (which may be the same four courses). Finally, students must select four courses outside their major department. Psychology majors must choose four courses outside of psychology; business majors must choose four courses outside of the Marshall School of Business. To enroll in this minor, students must have completed a minimum of 32 units of college-level courses and have a minimum overall GPA of 2.75.

REQUIREMENTS		UNITS
Choose one of the following courses (4 units):		
BUAD 307	Marketing Fundamentals	4
PSYC 100	Introduction to Psychology	4

Choose one of the following courses (4 units):

MKT 450	Consumer Behavior and Marketing	4
PSYC 355*	Social Psychology	4
SOCI 320	Social Psychology	4

Choose two of the following courses (8 units):

ANTH 460	Economic Anthropology	4
COMM 302	Persuasion	4
MKT 405*	Advertising and Promotion Management	4
MKT 410*	Personal Selling	4
ECON 432*	Economics of Happiness	4
PSYC 451*	Formation and Change of Attitudes	4
PSYC 454*	Social Cognition	4

Choose one of the following courses (4 units):

COLT 365	Literature and Popular Culture	4
COMM 384	Interpreting Popular Culture	4
ENGL 392	Visual and Popular Culture	4
HIST 380	American Popular Culture	4
MKT 470*	Marketing Research	4
PSYC 490x	Directed Research	4
Total requirements: five courses		20 units

*Prerequisites required

(Please note that prerequisites will not be waived for upper-division courses; students must complete the introductory classes they will need.)

Minor in Entrepreneurship

The minor in entrepreneurship is available to students in all schools and departments except business majors. It provides an understanding of entrepreneurship and the entrepreneurial mindset. To enroll in this minor, students must have completed a minimum of 32 units of college-level course work and have a minimum overall GPA of 2.75. Students will complete an application for the minor and a one-page personal statement of goals and objectives.

COURSE REQUIREMENTS (11-12 UNITS)		UNITS
BAEP 423	Management of Small Businesses	4
BAEP 451	The Management of New Enterprises, or	4
BUAD 301	Technical Entrepreneurship	3
BAEP 452	Feasibility Analysis	4

Electives

Choose from the following to achieve a total of at least 16 units:

BAEP 495	Practicum in Business Issues (Internship)	1
BUAD 302	Communication Strategy in Business	4
BUAD 304	Leading Organizations	4
BUAD 307	Marketing Fundamentals	4
BUAD 311	Operational Management	4
FBE 400x	Introduction to Real Estate Finance and Development	4
FBE 403	Introduction to the Legal Environment of Business	4

Minor in Human Resource Management

The minor in human resource management is available to students in all schools and departments except business majors. It is appropriate for students pursuing careers in human resource management, as well as for students pursuing management positions where they will be interfacing with or relying on the human resource function for support. To enroll in this minor, students must have completed a minimum of 32 units of college-level courses and have a minimum overall GPA of 2.75. Completion of the human resource management minor requires a minimum GPA of 2.0 in the following business minor courses:

MINOR COURSE REQUIREMENTS		UNITS
BUAD 304	Leading Organizations	4
MOR 471	Managing and Developing People	4

Electives

Choose three courses from the following (12 units):

FBE 428	Principles of Employment Law	4
FBE 433*	Corporate Governance and CEO Pay	4
MOR 421	Social and Ethical Issues in Business	4
MOR 431	Interpersonal Competence and Development	4
MOR 461	Design of Effective Organizations	4
MOR 463	Organization Change and Development	4
MOR 469	Negotiation and Persuasion	4
MOR 472	Power, Politics and Influence	4
MOR 473	Designing and Leading Teams	4

*Prerequisite that is not part of this minor required

Minor in Innovation: The Digital Entrepreneur

The Minor in Innovation: The Digital Entrepreneur is jointly sponsored by the Lloyd Greif Center for Entrepreneurial Studies in the Marshall School of Business and the Information Technology Program of the USC Viterbi School of Engineering. The minor is designed for students from a wide range of backgrounds who are interested in starting their own digital ventures, working for start-up companies or consulting firms that advise in the field, or pursuing traditional jobs with large corporations who may be launching new digital business units. Students will learn all major elements of launching a digital venture including ideation, feasibility analysis, high-tech product management, online customer acquisition, technology implementation, online business models and monetization. Students will work on launching a digital venture in a team-based environment in the capstone class. For more details, see Information Technology Program, page xx.

Minor in Managing Human Relations

This interdisciplinary minor is for students in all schools with an interest in human relations as a subject of study or professional goal. In addition to course work in organizational behavior, social psychology and management, this minor includes attention to questions of ethics and leadership. See Sociology, page xx, for course requirements.

Minor in Management Consulting

The minor in management consulting is available to students in all schools and departments except business majors. The minor develops skills used by professional consultants to assist organizations and businesses in identifying and addressing their issues and problems.

To enroll, students must have completed a minimum of 32 units of college-level courses and have a minimum overall GPA of 2.75. Completion of this minor requires a minimum GPA of 2.0 in the following courses:

COURSE REQUIREMENTS		UNITS
BUAD 304	Leading Organizations	4
MOR 462	Management Consulting	4

Electives

Choose three courses from the following (12 units):

IOM 455	Project Management	4
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MOR 421	Social and Ethical Issues in Business	4	IOM 433	Business Information Systems Analysis and Design	4	REQUIRED COURSES (16 UNITS)		UNITS
MOR 461	Design of Effective Organizations	4	IOM 441	Service Operations	4	Accounting		
MOR 463	Organization Change and Development	4	IOM 455	Project Management	4	Choose one option from the following:		4-6
MOR 465	Advanced Methods in Strategy Analysis	4	Minor in Organizational Leadership and Management The minor in organizational leadership and management is available to students in all schools and departments except business majors. Students in the minor learn about personal and organizational leadership, ethics of the workplace, leading in a global context and organizing and planning for effective personal and organizational performance. To enroll, students must have completed a minimum of 32 units of college-level courses and have a minimum overall GPA of 2.75. Completion of this minor requires a minimum GPA of 2.0 in the following courses:			ACCT 410X*	Foundations of Accounting (4), or	
MOR 469	Negotiation and Persuasion	4				BUAD 280	Accounting I (4), or	
MOR 473	Designing and Leading Teams	4				BUAD 285a	Accounting Fundamentals, Financial and Managerial Accounting (4), or	
						BUAD 286ab	Accounting Fundamentals, Managerial and Financial Accounting (4-2), or	
						BUAD 305	Abridged Core Concepts of Accounting Information (4)	

Minor in Marketing

The minor in marketing is available to students in all schools and departments except business majors. Marketing studies processes that organizations use to identify and serve the needs of customers.

The marketing minor provides a business-related education that will supplement many undergraduate majors, and enhance the career prospects for students whose majors could incorporate a marketing dimension or application. This minor should appeal to any student interested in an early marketing career, which includes, but is not limited to, professional sales, retailing, marketing research, product management and advertising.

Eligible students must have completed a minimum of 32 units of college-level course work and have a minimum GPA of 2.75. Students take four elective courses offered in the marketing department to satisfy this minor.

Minor in Mathematical Finance

This interdisciplinary minor was created for students in business, economics and mathematics, whose majors already require some of the introductory course work. Students in other programs are welcome but should expect the minor to require more units than it does for students in those programs. See Mathematics, page xx, for course requirements.

Minor in Operations and Supply Chain Management

The minor in operations and supply chain management is available to students in all schools and departments except business majors. This minor requires 20 units to complete. To enroll, students must be in good standing with the university and have completed 48 units of college level credit. Students must complete an application for the minor, including a one-page statement of how the minor will contribute to their goals and objectives.

MINOR COURSE REQUIREMENTS		UNITS
BUAD 311	Operations Management	4
IOM 482	Supply Chain Management	4
IOM 483	Operations Consulting	4

ELECTIVES

Choose from the following to achieve a total of at least 8 units:

IOM 401	Business Information Systems — Spreadsheet Applications	2
IOM 427	Spreadsheet Modeling, Optimization and Analysis	4

COURSE REQUIREMENTS

BUAD 304	Leading Organizations	4
MOR 470	Global Leadership	4

Electives

Choose three courses from the following (12 units):

MOR 421	Social and Ethical Issues in Business	4
MOR 431	Interpersonal Competence and Development	4
MOR 469	Negotiation and Persuasion	4
MOR 471	Managing and Developing People	4
MOR 472	Power, Politics and Influence	4
MOR 473	Designing and Leading Teams	4
MDA 365	The Art and Adventure of Leadership	4

Minor in Real Estate Finance

The minor in real estate finance is available to all majors except business. It provides students with training in the areas of business, finance, real estate law, design, and urban economics. It provides an opportunity for students to gain thorough exposure to the topics of real estate investing, finance and development. Upon successful completion of this minor, students will have achieved a basic understanding of the interplay of the various disciplines involved in contemporary real estate ownership and investment and how they impact the areas of the student's specific interests and expertise.

Those completing this minor will master techniques in valuing income-producing properties, analyze financial instruments such as mortgages and loans, understand the roles of debt and equity, gain insights into the processes of design and construction, as well as understand the dynamics of how real estate markets affect the underlying values of real property assets, as well as the role real estate markets play in the overall economy.

To enroll, students must have completed a minimum of 32 units of college-level course work and attained a minimum overall GPA of at least 2.75. Successful completion of this minor requires a minimum of 16 upper-division units in the minor and a cumulative GPA of 2.0 for the 24 units.

Business Finance

BUAD 215X*	Foundations of Business Finance, or	
BUAD 306**	Business Finance	4

Real Estate Finance

FBE 391	Real Estate Finance and Investment, or	
FBE 400X	Introduction to Real Estate Finance and Development	4

Real Estate Law

FBE 427	Real Estate Law	4
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Electives

Choose two courses (8 units) from the following:

FBE 466	Management of Real Estate Development: Feasibility Studies	4
FBE 470	Advanced Real Estate Analysis	4
FBE 489	Real Estate Capital Markets	4

*ACCT 410X or BUAD 280 or BUAD 305 must be taken before BUAD 215X.

**Requires prerequisite of ECON 251 or ECON 351 and corequisites of ECON 252 or ECON 352 and BUAD 310 or EE 364

Minor in Social Entrepreneurship

The minor in social entrepreneurship provides students from all non-business undergraduate majors with a foundation in the context and practice of social entrepreneurship, nationally and internationally. The minor provides an understanding of social entrepreneurship and its relationship to government and public policy as well as an understanding of management skills specific to starting and maintaining a social enterprise. The curriculum includes options allowing the student to tailor course work to his or her individual academic interests and professional aspirations.

To enroll in this minor, students must have declared a major, and must have completed 32 units of college level courses with a cumulative USC GPA of at least 2.75. Students will complete an application for the minor.

COURSE REQUIREMENTS (14 UNITS)

BAEP 450X	Fundamentals of Entrepreneurship, or	
BAEP 451	The Management of New Enterprises	4
BAEP 491	Introduction to Social Entrepreneurship	4

BAEP 497	Field Project in Entrepreneurship, or		<i>Electives</i>	
BAEP 460	Seminar in Entrepreneurship, or		Complete at least 7 units from the following:	
BAEP 470	The Entrepreneurial Mindset — Taking the Leap	2	BAEP 452 Feasibility Analysis	4
PPD 371	The Nonprofit Sector and the Public Interest	4	BUCO 485 Business Communication Management for Nonprofits	4
			CE 469 Sustainable Design and Construction	3
			SOCI 360 Social Inequality: Class, Status, and Power	4
			PPD 478 Social Innovations	4

Minor in Engineering Technology Commercialization

This undergraduate minor is interdisciplinary in nature, requiring courses from both the business and engineering schools. See the USC Viterbi School of Engineering, Special Educational Opportunities section, page xx, for requirements.

Graduate Degree Overview

The Marshall School of Business prepares men and women to become leaders at every level of management. Today's successful businesses demand flexibility, innovation, creativity, teamwork and leadership from their employees. The Marshall School's goal is to help students meet those demands through a rigorous grounding in all functional areas of business and the honing of analytical and interpersonal skills required to address real business problems.

The more than 185 faculty members at the school include authorities recognized around the world for their contributions to business theory and practice. They are also distinguished by their dedication to teaching excellence.

The Marshall School of Business offers seven graduate degrees: The Master of Business Administration (MBA), the Master of Science in Business Administration (M.S.), the Master of Business for Veterans (MBV), the Master of Management in Library and Information Science (MMLIS), the Master of Management Studies (MMS), the Master of Medical Management (MMM) and the Doctor of Philosophy (Ph.D.). The Marshall School jointly sponsors a Master of Long Term Care Administration. Graduate certificates in supply chain management, financial analysis and valuation, technology commercialization, management studies, and business fundamentals for non-business professionals are also offered.

Master of Business Administration (MBA)

MBA students gain an understanding of the forces confronting business around the world and are encouraged to take an active role in making a difference — to seek out opportunities for personal and professional growth and to empower others in the pursuit of shared goals. The Master of Business Administration is offered through five distinct programs.

While the five programs are designed to meet the needs of different types of students, all programs have the same goals: providing students with the skills and knowledge necessary to become effective leaders; developing a thorough understanding of business fundamentals such as economics, accounting, finance, marketing and operations; and refining basic skills, such as use of information systems and statistical analysis. Each student is challenged to develop self-understanding and an appreciation for the complexities of organizations.

Full-time MBA Program

The Marshall MBA program is designed for individuals who can leave the world of work and immerse themselves "full time" in two years of graduate education. It

provides a foundation for success that balances theory with real-world application.

During the first year, a "hands-on" approach to leadership and business education combines case analysis, management simulations, executive seminars and international travel with traditional methods for establishing a conceptual understanding of the general management role in a global context. Elective options in the second semester allow students to complement the core curriculum with individualized interests. Summer internships help students apply their knowledge in practice and prepare for the job market.

In year two, students continue to chart their own course of study. A wide array of elective courses offers students immersion in specific functional areas, disciplines and industries. The selection allows students to gain an in-depth understanding of a particular subject or to continue to pursue a broad-based management education. See page xx.

Part-time MBA Program for Professionals and Managers

The MBA Program for Professionals and Managers (MBA.PM) allows fully employed individuals to pursue an MBA degree while continuing their career development. Students can pursue the first year of study at the University Park Campus or at the USC Orange County Center in Irvine. Elective course work is completed on the University Park Campus. The curriculum, offered in the evening, is similar to the curriculum offered to full-time MBA students but is modified to allow completion of the program in 33 months. See page xx.

Executive MBA Program

The Executive MBA program provides those with significant work experience, particularly mid- to senior-level professionals who have high potential as business and industry leaders, a chance to complete an MBA on Fridays and Saturdays over a two-year period without interrupting their careers. The program is offered on the University Park Campus in downtown Los Angeles as well as in San Diego.

This program uses a non-traditional, interdisciplinary approach to executive and management education through "themes" that integrate various functional areas and address classic, yet dynamic business issues.

Through the integrated curriculum, participants develop a complete understanding of decision-making, a focus on the future and the international context of business as well as strong interpersonal, leadership and analytical skills. More specifically, participants achieve advanced skills in corporate and international finance,

marketing, environmental and strategic analysis, information technology, organizational leadership, managerial communication and corporate relations.

Core faculty include the school's most senior, experienced members as well as nationally renowned academic and business specialists. The program includes three residential off-site experiences — two domestic and one international. See page xx.

International MBA Program (IBEAR MBA)

The IBEAR MBA is a mid-career international MBA emphasizing trade and investment in and between the Americas and Asia in particular. Participants complete the equivalent of two years of intensive MBA study and return to their careers in 12 months.

In addition to an internationalized set of core courses, the program includes elective course offerings on international management, international financial management, global e-business, global marketing strategy, international trade, politics for global management and global strategy.

The program features a two-term international business consulting project, a cross-cultural team-building retreat, a visiting international expert speaker series and participation in Marshall's annual Asia/Pacific Business Outlook Conference.

IBEAR MBA graduates join a network of well-placed alumni in more than 50 nations. See page xx.

Global Executive MBA Program (GEMBA)

The Global Executive MBA program (GEMBA) in Shanghai is designed for rising business leaders throughout East Asia and the Pacific Rim who seek a U.S.-style business education with a global perspective. GEMBA provides a unique opportunity for networking and personal development within the framework of an increasingly competitive Asian market.

GEMBA mirrors the long-standing Marshall Executive MBA program, employing a nontraditional, interdisciplinary and integrated approach to executive and management education through "themes" that integrate various functional areas and address classic, yet dynamic business issues.

Core faculty include the school's most senior, experienced members as well as renowned academic and business specialists.

Through the integrated curriculum, participants develop a complete understanding of decision-making, a focus on the future and the international context of business as well as strong interpersonal, leadership and analytical skills. More specifically, participants achieve advanced skills in corporate and international finance,

marketing, environmental and strategic analysis, information technology, organizational leadership, managerial communication and corporate relations.

USC Marshall offers GEMBA in partnership with the Antai College of Economics and Management at Shanghai Jiao Tong University in China. Because classes meet in both Shanghai and Los Angeles, students must be able to participate fully in the travel requirements of the program. Classes are taught in English.

Dual MBA Degree Programs

Dual degree programs offer graduate students the opportunity to complete concurrently the requirements for two degrees. The Marshall School offers the MBA in conjunction with a number of other programs at USC:

- Juris Doctor/Master of Business Administration (J.D./MBA)
- Master of Business Administration/Master of Arts in East Asian Area Studies (MBA/M.A.)
- Master of Business Administration/Master of Planning (MBA/MPL)
- Master of Business Administration/Master of Real Estate Development (MBA/MRED)
- Master of Business Administration/Master of Science in Gerontology (MBA/M.S.)
- Master of Business Administration/Master of Science in Industrial and Systems Engineering (MBA/M.S.)
- Master of Business Administration/Doctor of Education (MBA/Ed.D.)
- Master of Business Administration/Doctor of Medicine (MBA/M.D.)
- Master of Business Administration/Doctor of Pharmacy (MBA/Pharm.D.)
- Master of Business Administration/Master of Arts in Jewish Nonprofit Management (MBA/M.A.)
- Master of Business Administration/Master of Social Work (MBA/MSW)

Master of Management Studies (MMS)

The Master of Management Studies is designed to provide students who have completed graduate business course work equivalent to the first year of a traditional two-year MBA program with an opportunity to pursue further studies at the USC Marshall School of Business. The program is especially valuable for those who have completed the first year of a traditional MBA at another institution and those who completed one-year MBA programs and wish to enhance their knowledge in specialized areas of business. The degree can be completed on either a full- or part-time basis, and classes are available during both daytime and evening hours. See page xx.

Master of Science in Business Administration (M.S.)

The Master of Science in Business Administration is designed to provide students with an opportunity to pursue an area of specialization subsequent to successfully completing the Master of Business Administration (MBA). The program is especially valuable for those who wish to enhance their knowledge base in a specialized area of business. In cooperation with a faculty member, the student in this program designs a course of study to meet his or her individual needs. The degree can be completed on either a full- or part-time basis, and classes are available during both daytime and evening hours. See page xx.

Master of Science in Business Research (M.S.)

The Master of Science in Business Research is designed to provide an alternative for Marshall Ph.D. students. Marshall does not accept applications for admission to this program. See page xx.

Master of Medical Management (MMM)

This program is designed for physicians in the medical field who wish to gain formal business knowledge and develop critical thinking skills. Significant project and course work is completed primarily through distance learning venues. The program consists of four one-week intensive residential sessions. See page xx.

Master of Long Term Care Administration

This program is designed to prepare competent individuals to administer the long term needs of America's elderly population. It is jointly offered by the USC Davis School of Gerontology, the Marshall School of Business, and the USC Price School of Public Policy. For information, see the Davis School of Gerontology, page xx.

Master of Digital Supply Chain Management

The Marshall School of Business, jointly with the Viterbi School of Engineering, offers individuals an opportunity to expand their knowledge of the rapidly expanding uses of technology in the management of global supply chains. The program focuses on teaching the necessary knowledge and skills in areas like product introduction; strategic procurement; outsourcing; logistics and distribution; information technology and its role in managing global supply chains; and supply chain optimization. See page xx.

Master of Science in Global Supply Chain Management (M.S.)

The Marshall School of Business offers individuals across the U.S. and around the world an opportunity to expand their knowledge of management of the ever-changing world of global supply chains. The program provides managers with tools, ideas and frameworks that will aid them in improving the performance of the global supply chains that they manage. Courses are broadcast via distance learning technologies so that, with the exception of two international travel experiences, the degree can be completed through the Internet. Additional in-person instructional activities are provided at partner institutions. Two international travel experiences to global distribution hubs are included in the program. In-person midterms and final exams may be required for some courses, in which case they will be administered in cities near student population concentrations. See page xx.

Master of Business for Veterans (MBV)

This program is designed for veterans who wish to gain formal business knowledge and develop critical thinking skills to manage or grow a business. Significant project and course work is completed during the two-semester program. Class sessions meet over 16 full-day sessions each semester, offered on the University Park Campus in downtown Los Angeles. See page xx.

Master of Management in Library and Information Science (MMLIS)

The Master of Management in Library and Information Science program is designed to educate professional librarians for leadership from every level of the organization in academic, urban and corporate environments. Graduates will identify and analyze critical issues and leverage resources and expertise to build community assets. The program is taught entirely online. See page xx.

Graduate Certificate in Business Fundamentals for Non-Business Professionals

The Graduate Certificate in Business Fundamentals for Non-Business Professionals is designed for individuals who hold undergraduate degrees in non-business fields and seek core business knowledge to support management responsibilities or relationships with business professionals but who are not likely to pursue an MBA. It is best suited to mid- and senior-level managers, professional and technical specialists assuming management responsibilities, those seeking improved career mobility, individuals returning to the work force and small business owners. The program provides a basic introduction to the major disciplines within the field of business, common business practices and effective business communication. Classes are offered primarily at night to accommodate the needs of working professionals. See page xx for course requirements.

Graduate Certificate in Financial Analysis and Valuation

The Graduate Certificate in Financial Analysis and Valuation is designed to offer students the intensive instruction and training needed to successfully compete in rapidly developing global financial markets. Course work in the fundamental theories and practice of financial accounting, financial analysis, valuation, credit analysis, and financial instruments and markets expands analytical capacities to better understand and develop strategic financial decisions. See page xx for course requirements.

Graduate Certificate in Management Studies

The Graduate Certificate in Management Studies is designed to provide students who have completed graduate business course work equivalent to the first year of a traditional two-year MBA program with an opportunity to pursue further studies at the USC Marshall School of Business. The program is especially valuable for those who have completed the first year of a traditional MBA at another institution and those who completed a one-year MBA program and wish to enhance their knowledge in specialized areas of business. The certificate can be completed on either a full- or part-time basis, and classes are available during both daytime and evening hours.

Graduate Certificates in Digital Supply Chain Management

Three 15-unit graduate certificate programs offer working professionals opportunities to study specific aspects of supply chain management without committing the time and resources required to earn a master's degree. Certificates in information systems and supply chain management, optimization and supply chain management, and supply chain strategy are offered. See Master

of Digital Supply Chain Management, page xx, for course requirements.

Graduate Certificate in Technology Commercialization

The Graduate Certificate in Technology Commercialization, offered through the Lloyd Greif Center for Entrepreneurial Studies, provides technology commercialization skills in an academic/real world environment that combines theory and practice. Through a living laboratory academic program, students experience the entire spectrum of the commercialization process:

invention, product development, technical and market feasibility analysis, intellectual property acquisition, business development and venture funding. Working with USC scientists and engineers, students have the potential to become stakeholders in a new technology venture. They are also eligible to apply for summer internships sponsored by industry partners to give them additional experience in taking a new technology to market. The program is particularly well suited to those in science, engineering and business. See page xx for course requirements.

Doctor of Philosophy (Ph.D.)

The Doctor of Philosophy program in business administration is designed to produce research-oriented graduates who, from positions in academia, can advance business practice and enhance the contributions that businesses make to the larger community. These goals can be advanced through research contributions in theory, concepts, methods and practices, and education of the next generation of business leaders.

Master's Degree and Graduate Certificate Programs

Admission Requirements

A bachelor's degree equivalent to a four-year U.S. undergraduate degree from an accredited institution (regardless of field or major) is required for admission to any master's degree program at the Marshall School of Business.

Successful performance in Marshall master's programs requires computer proficiency in word processing, database management, electronic spreadsheets and business graphics. Following admission, Marshall Instructional Technology Services is available for additional preparation. Knowledge of calculus is a prerequisite to some of the courses offered by the Marshall School of Business.

All applicants are required to submit the following documents: (1) completed application form; (2) a non-refundable application fee; (3) responses to required essay questions; (4) history of full- and part-time work experience or resume; (5) one official transcript from the registrar of each college or university attended (undergraduate and postgraduate, if applicable) whether the degree was completed or not. If all college or postgraduate work has not been completed, transcripts must be sent again when work in progress is completed and the degree posted. Transcripts written in languages other than English must be accompanied by a certified English translation; if transcripts do not include a degree conferral date, degrees must be verified through WES or IERF; and (6) letters of recommendation. (7) Most programs require Graduate Management Admission Test (GMAT) or Graduate Record Examination (GRE) scores. Applicants must have taken the examination prior to submitting an application. It is recommended that unofficial copies of test scores be submitted as uploaded documents with the application in addition to having official scores sent to USC. (8) All international students who did not earn a bachelor's degree from a college or university in the United States, Canada, the United Kingdom, Ireland, Australia or New Zealand must submit recent scores from the Test of English as a Foreign Language (TOEFL), the International English Language Testing System (IELTS) or the Pearson Test of English Academic (PTE). Official test scores are sent by the testing services directly to USC, and unofficial copies can be uploaded as attachments to the application. Additionally, proof of financial support is required of admitted international applicants.

To ensure a place in a program and adequate time to receive an admission decision, it is important to send

completed application materials well in advance of the semester for which the applicant wishes to register. For the non-traditional student, if work is still in progress to complete a bachelor's degree, the applicant must state specifically what courses are in progress, what must be done to finish and the estimated date of completion. Admission is contingent upon official verification of a bachelor's degree.

In their review of applications, admissions committees consider all of the applicant's completed academic work, test score, evidence of leadership and motivation, letters of recommendation, level of job responsibility and work history, and unique talents and contributions. Applicants are reviewed on their potential for successful performance in graduate business studies and their competitiveness within the current applicant pool.

Additional program-specific admission criteria are detailed below and available on each program's Web site. Links are available at marshall.usc.edu/masters.

Full-time MBA Program

The Marshall full-time MBA curriculum is a comprehensive two-year (63-unit) learning experience designed to develop outstanding leaders who act with positive impact and character in a rapidly changing economic, social and political world.

A core of 10 essential courses is designed to build the foundation of skills required of all leading executives, develop collaborative talent, cultivate innovation and expand the student's vision with a global perspective. An individualized program of study, which begins in the second semester of the first year, allows students to acquire knowledge and skills in specialized functions within specific industries.

Recognizing that success in business requires more than a thorough knowledge of the vernacular of business, the full-time MBA curriculum is both broad and deep, offering students an opportunity to learn about business from varying perspectives. full-time MBA students develop:

- a strategic perspective that understands the global dynamics of worldwide industries and new markets;
- an ability to integrate decisions and solutions across disciplines in complex decision-making environments;
- a world view that understands and appreciates different cultures and economies;

- a clear framework for ethical and values-based, decision-making supported by unyielding personal integrity and the confidence to act accordingly;
- a professional presence and the ability to articulate a vision needed to motivate others and lead diverse teams of people.

Full-time MBA graduates are collaborative by nature, innovative in spirit and global in perspective.

The Faculty

Instructors in the full-time MBA program are an inspired group of teachers who are passionate about nurturing the development of their students and are committed to the program and to innovative implementation. Scholars bring their latest thinking into the classroom and convey it so that students embrace ideas and learning with excitement and a willingness to demonstrate that learning and enthusiasm in their careers.

Recognized experts, academic specialists and industry leaders are actively involved in the program. Faculty known for their work in Marshall research centers offer industry collaboration. Many faculty connect with other schools in the university, tap into the strengths of innovative Southern California industries and engage our alumni across industries and globally. The valuable contributions of experience and expertise from individuals and organizations outside Marshall weave theory with practice.

An Advanced Learning Environment

The educational approach of the full-time MBA is a careful balance of case learning along with course work, lectures, experiential exercises and field studies. Students are members of supportive and challenging learning communities. The experience is hands-on and team-work based, with extensive opportunities to work with real companies and managers on real projects.

Classes are taught in state-of-the-art case rooms featuring network access for every student. The Experiential Learning Center offers students opportunities for experimentation, video practice, simulation exercises and group preparation.

The full-time program is rigorous, intellectually demanding and time-intensive. Students typically spend 60–80 hours per week on course work and projects.

Application

Applicants should have significant full-time work experience. Letters of recommendation submitted with

the application should relate to the applicant's work experience. For more information, contact the Marshall MBA Admission Office in Popovich Hall (JKP) 308; (213) 740-7846; Fax (213) 749-8520; marshall.usc.edu. Apply online at marshall.usc.edu/admissions/applyonline.

Application Deadlines

Admission decisions for the full-time program are made within four admission rounds. Applicants who submit completed applications (including test scores) to the Admission Office by the December, January, February and April dates listed on marshall.usc.edu/admissions/applyonline will receive notification in approximately six weeks. Applicants are urged to file a completed application as early as possible, as the applicant pool is extremely competitive. The final deadline to apply for the full-time program is April 1.

Summer Preparation

The average full-time MBA student is returning to school after completing five years of full-time employment. To help students prepare for their return to academia and refresh their knowledge of business fundamentals, Marshall provides non-credit tutorials and workshops via online/distance formats. Students complete the summer preparation materials and master the information before arriving on campus.

Orientation programs take place during the latter half of July.

Early Start to First Year

The academic program begins the first week of August with a three-week intensive term that includes workshops in leadership and ethics and graded course work in management communication, strategy, statistics and financial accounting. The fall semester academic program continues with classes, workshops and study sessions meeting Monday through Friday.

Focus on Collaboration

The ability to work in and manage teams is becoming increasingly important in business practice. Building these skills during the program is a key part of each student's leadership growth.

Students are assigned to small teams for the first semester of study. These teams are composed of students with diverse backgrounds and experiences to enhance the overall learning experience for each team member. Teamwork is crucial to success in a variety of settings including group projects, study groups and competitive assignments. A greater understanding of teams is bolstered through formal discussions and presentations throughout the year.

In addition to formal team projects, a strong community of mutual support develops from the important role informal study groups play in the school's academic culture.

The Core: An Integrated Program of Study

Although the curriculum lists a series of required courses to be taken during the first year of the full-time MBA program, students are, in many ways, pursuing one nine-month course because the individual courses and materials covered are highly integrated.

The first-year teaching team develops and evaluates selected assignments jointly, linking concepts across

courses, and occasionally team teaching, examining complex business programs from multiple perspectives.

Management Communication for Leaders

Management Communication for Leaders is a business communications course comprising class sessions, tailored workshops and ongoing individual and group coaching. First-year students are immersed in developing their presentation skills, interpersonal communication skills and emotional intelligence — the ability to understand and respond to the human side of business — all skills required of successful leaders.

PRIME

The global vision generated during the first year of the MBA culminates with PRIME — the Pacific Rim International Management Experience. The final component of the Global Context of Business course, PRIME takes on-campus classroom study abroad for nine days. Integrating the classroom and international travel components of the course, students conduct research on industry- and company-specific business issues and report their findings in major presentations. Recent PRIME locations include Sao Paulo, Brazil/Buenos Aires, Argentina; Shanghai/Beijing, China; Hong Kong/Shenzhen, China; Tokyo, Japan; and Hanoi, Vietnam/Bangkok, Thailand.

Internships

Practical experience is critical to success in business. Marshall has developed an extensive network of prospective employers who offer internships during the summer between their first and second year. Successful internships often lead to job offers.

International Exchange Program

The Marshall School offers a range of international semester-long exchange programs in cooperation with leading business schools around the world. Since many of the programs are taught in English, language proficiency is not a requirement for all countries. Students must complete the MBA core courses and maintain a 3.0 GPA in order to participate in the exchange program. This program is open to full-time MBA and MBA.PM students.

Program Structure

A total of 63 units is required. The following outlines the typical full-time student's schedule:

FIRST YEAR "CORE" REQUIRED COURSES —

FIRST SEMESTER		UNITS
GSBA 502	Management Communication for Leaders	3
GSBA 510	Accounting Concepts and Financial Reporting	2
GSBA 511	Microeconomics for Management	2
GSBA 524	Managerial Statistics	2
GSBA 533	Organizational Behavior and Leadership	1.5
GSBA 540	Contemporary Issues in Competitive Strategy	1.5
GSBA 504a	Operations Management	1.5
GSBA 509a	Marketing Management	1.5
GSBA 521a	Corporate Finance	1.5

Select 2 of the following

GSBA 504b	Operations Management	1.5
GSBA 509b	Marketing Management	1.5
GSBA 521b	Corporate Finance	1.5
		19.5

SECOND SEMESTER

	UNITS
GSBA 580 The Global Context of Business	4.5
Graduate business electives (500-level ACCT, BAEP, BUCO, FBE, IOM, MKT, or MOR)	12
	16.5

SECOND YEAR

	UNITS
Graduate business electives (500-level ACCT, BAEP, BUCO, FBE, IOM, MKT, or MOR)	27
Total units required for degree:	63

Note: USC reserves the right to change, add or delete its course offerings and programs without notice.

MBA Program for Professionals and Managers

The MBA Program for Professionals and Managers (MBA.PM) is a part-time, comprehensive MBA program that allows fully employed individuals to pursue their MBA degree. The program offers flexibility and a rich array of elective courses. Students in the MBA.PM program complete the degree in 33 months attending classes in fall and spring semesters and summer sessions.

The MBA.PM offers the following advantages:

- the scheduling design allows students to complete the degree in a timely way, while continuing to work full time;
- program flexibility allows students to tailor their selection of elective courses to their individual interests;
- PM.GLOBE, a course which includes an international trip, gives all MBA.PM students first-hand exposure to international markets;
- a cohesive group of student colleagues proceeds through the core together, providing opportunities for building relationships with other talented and ambitious individuals;
- special academic and social activities enhance the richness of the MBA experience; and
- interaction between faculty and students enhances the overall learning experience.

The first year of the MBA.PM program is also offered at the Orange County Center in Irvine. All students take their elective courses at the University Park Campus in Los Angeles.

Students attend core classes two nights per week for 12 months. Students must complete the core courses in the prescribed sequence and within the prescribed time frame. Elective courses are offered on a semester basis during the remaining portion of the program, including summer session.

During the elective portion of the program, MBA students are encouraged to pursue a course of study that meets their professional goals. Students design their course of study by taking electives offered in the Marshall School and by sometimes taking courses in other areas of the university. Up to 9 units of graduate-level electives may be taken at USC outside the Marshall

School of Business for elective credit provided the student shows sufficient reason why a selected course is relevant to the Marshall School of Business program. Permission to take courses outside the Marshall School must be requested via petition to the MBA.PM Program Office in Popovich Hall 106.

International Exchange Program

The Marshall School offers a range of international semester-long and summer exchange programs in cooperation with leading business schools around the world. Since many of the exchange programs are taught in English, language proficiency is not a requirement for all countries. Students must complete the MBA core courses and maintain a 3.0 GPA in order to participate in the exchange program. This program is open to full-time MBA and MBA.PM students.

Application

Applicants should have significant full-time work experience. Letters of recommendation submitted with the application should relate to the student's work performance (resume).

The program enrolls students one time per year in the fall. For more information, contact the Marshall MBA Admission Office in Popovich Hall (JKP) 308; (213) 740-7846; Fax (213) 749-8520; marshall.usc.edu. Apply online at marshall.usc.edu/admissions/applyonline.

Sample Program

A total of 63 units is required for the program. The following outlines the typical MBA.PM student's schedule:

FIRST YEAR "CORE" REQUIRED COURSES —

FALL TERM	UNITS
GSBA 510 Accounting Concepts and Financial Reporting	3
GSBA 511 Managerial Economics	3
GSBA 519a Strategic Formulation for Competitive Advantage	1.5
GSBA 542 Communication for Management	1.5
	9

WINTER TERM A&B	UNITS
GSBA 506ab Applied Managerial Statistics	3
GSBA 522ab Managerial Perspectives	3
GSBA 581 Information Management	1.5
	7.5

SPRING TERM	UNITS
GSBA 528 Marketing Management	3
GSBA 544 The Firm in the National Economy	1.5
GSBA 548 Corporate Finance	3
	7.5

SUMMER SESSION	UNITS
GSBA 518 Accounting Control Systems	3
GSBA 519b Strategic Formulation for Competitive Advantage	1.5
GSBA 534 Operations Management	3
	7.5

SECOND YEAR — FALL SEMESTER	UNITS
GSBA 586 Current Trends in Business	1.5
Graduate business electives (2) (500-level ACCT, BAEP, BUCO, FBE, IOM, MKT or MOR)	6
	7.5

SPRING SEMESTER	UNITS
GSBA 582 Business Environment and Management Practices in the Pacific Rim	3
Graduate business elective (500-level ACCT, BAEP, BUCO, FBE, IOM, MKT or MOR)	3
	6

SUMMER SESSION	UNITS
Graduate business electives (2) (500-level ACCT, BAEP, BUCO, FBE, IOM, MKT or MOR)	6

THIRD YEAR — FALL SEMESTER	UNITS
Graduate business electives (2) (500-level ACCT, BAEP, BUCO, FBE, IOM, MKT or MOR)	6

SPRING SEMESTER	UNITS
Graduate business electives (2) (500-level ACCT, BAEP, BUCO, FBE, IOM, MKT or MOR)	6

Total units required for degree: 63

Note: USC reserves the right to change, add or delete its course offerings and programs without notice.

Executive MBA Program

The Executive MBA program is structured for mid-career to upper-career professionals who are fully employed. Rather than a program of traditional course disciplines (e.g., accounting, marketing, finance) the EMBA program offers a more thematic approach — integrating the material and often delivering it with faculty from different disciplines teaching in a team format. Core faculty include the school's most senior, experienced members as well as nationally renowned academic and business specialists. This program is delivered on Fridays and Saturdays (full days) for a two-year period at either the USC campus in downtown Los Angeles or in San Diego. As with the other USC Marshall MBA programs, an extensive international trip is integrated into the program.

Application

Application to the EMBA program does not require GMAT or GRE scores. In addition to the other general admission requirements, applicants should have 10 years of work experience that includes substantial managerial responsibilities. The Executive MBA Admissions office may be contacted at (213) 740-7846; Fax (213) 749-8520; or email: uscemba@marshall.usc.edu. Apply online at marshall.usc.edu/admissions/applyonline.

Program Structure

This program uses a non-traditional interdisciplinary approach to executive and managerial education

though "themes" that integrate various functional areas and address classic, yet dynamic, business issues.

The program begins with a six-day domestic residential session. Thereafter, the 21-month MBA program meets Fridays and Saturdays throughout the year with a short summer break. An eight-day international trip is scheduled during the first theme of the program's second year.

YEAR 1	UNITS
<i>Theme I</i>	
GSBA 560 The Perspective of Top Management	2
<i>Theme II</i>	
GSBA 561 Evaluating Market Performance	9
<i>Theme III</i>	
GSBA 562 Management of Operations	11
<i>Theme IV</i>	
GSBA 563 Technology and Information Systems Management	6
<i>Theme V</i>	
GSBA 564 Functional Strategies and Implementation	2
<i>YEAR 2</i>	<i>UNITS</i>
<i>Theme VI</i>	
GSBA 570 The Role of the Senior Executive	2
<i>Theme VII</i>	
GSBA 571 Environmental Analysis: Establishing Competitive Advantage	9
<i>Theme VIII</i>	
GSBA 572 Strategic Planning for Growth	11
<i>Theme IX</i>	
GSBA 573 Managing Strategic Change and Implementation	6
<i>Theme X</i>	
GSBA 574 The Executive of the Future	2
Total units required for degree: 60	

International MBA Program (IBEAR MBA)

The IBEAR MBA program is an accelerated global MBA for experienced managers and professionals. The curriculum contains internationalized core courses in its first three terms and selected international business electives thereafter. It concludes with a challenging consulting project in terms four and five.

Application

In addition to the general admission requirements, applicants should have a minimum of six years work and/or graduate study experience. Current participants average 11 years of experience and are 34 years of age. Scholarships are available to domestic and international students.

For more information, contact the IBEAR MBA Program; (213) 740-7140; Fax (213) 740-7559; or ibearmba@marshall.usc.edu; marshall.usc.edu. Apply online at marshall.usc.edu/admissions/applyonline.

Program Structure

This intensive full-time program begins in early August and ends in mid-July each year. It begins with a three-week transition program to assist international and domestic participants in adjusting to life in the U.S.

AUGUST SESSION		UNITS
GSBA 523	Communication for Management	3
TERM 1 — FALL		UNITS
GSBA 510	Accounting Concepts and Financial Reporting	3
GSBA 511	Managerial Economics	3
GSBA 524	Managerial Statistics	3
GSBA 529	Strategic Formulation for Competitive Advantage	3
		12
TERM 2 — FALL		UNITS
GSBA 518	Accounting Control Systems	3
GSBA 528	Marketing Management	3
GSBA 548	Corporate Finance	3
GSBA 549	The Firm in the National and International Economy	3
		12
TERM 3 — SPRING		UNITS
GSBA 534	Operations Management	3
GSBA 543	Managerial Perspectives	3
IBEAR designated international business electives		6
		12
TERM 4 — SPRING		UNITS
GSBA 584a	International Business Consulting Project	3
IBEAR designated international business electives		6
		9
TERM 5 — SUMMER		UNITS
GSBA 584b	International Business Consulting Project	2
IBEAR designated international business electives		6
		8

Total units required for degree: 56

Global Executive MBA Program

The Global Executive MBA program (GEMBA) in Shanghai offers a thematic approach — integrating the material and delivering it with faculty from different disciplines teaching in a team format. GEMBA is delivered over a 21-month period in 13 modules, featuring 10 five-day modules in Shanghai spanning weekends (Thursday through Monday), two nine-day modules at the Marshall School of Business in Los Angeles, and a study trip to another Asian country, plus assignments and examinations to be completed between classroom sessions. Shanghai sessions are taught at the Antai College of Economics and Management, Shanghai Jiao Tong University.

Application

Applicants should have a minimum of 10 years of work experience. General admission requirements apply except that in lieu of the TOEFL or IELTS score, prospective applicants are pre-screened by the GEMBA office in Shanghai. Contact the Shanghai Global Executive MBA office by phone at +86-21-6293-2707, by fax at +86-21-6293-2713 or by email at uscgemba@sjtu.edu.cn. Contact the L.A. Global Executive MBA office by phone at (213) 740-8243, by fax at (213) 740-7559 or by email at gemba@marshall.usc.edu. To apply online, visit marshall.usc.edu/admissions/applyonline.

Program Structure

GEMBA employs a nontraditional, interdisciplinary and integrated approach to executive and management education through focus on real-world “themes” that integrate various functional areas and address classic, yet dynamic business issues.

Classes begin in May at the Antai College of Economics and Management at Shanghai Jiao Tong University in China. Thereafter, the program continues in a series of theme-specific modules during the five-day sessions, held every six weeks, primarily at the Antai College. Students take an in-depth study trip to another Asian country in the second year.

The program concludes with a nine-day capstone module held at the USC Marshall School of Business in Los Angeles and the commencement celebration.

YEAR 1, SUMMER		UNITS
<i>Theme I</i>		
GSBA 560	The Perspective of Top Management	2
<i>Theme II</i>		
GSBA 561	Evaluating Market Performance	9
YEAR 1, FALL		UNITS
<i>Theme III</i>		
GSBA 562	Management of Operations	11
YEAR 1, SPRING		UNITS
<i>Theme IV</i>		
GSBA 563	Technology and Information Systems Management	6
YEAR 2, SUMMER		UNITS
<i>Theme V</i>		
GSBA 564	Functional Strategies and Implementation	2
<i>Theme VI</i>		
GSBA 570	The Role of the Senior Executive	2
YEAR 2, FALL		UNITS
<i>Theme VII</i>		
GSBA 571	Environmental Analysis: Establishing Competitive Advantage	9
<i>Theme VIII</i>		
GSBA 572	Strategic Planning for Growth	11

YEAR 2, SPRING		UNITS
<i>Theme IX</i>		
GSBA 573	Managing Strategic Change and Implementation	6
<i>Theme X</i>		
GSBA 574	The Executive of the Future	2

Total units required for degree: 60

Dual MBA Degree Programs

Students may complete dual degrees in conjunction with the Marshall MBA, MBA.PM or IBEAR MBA programs.

Admission criteria for applicants to dual degree programs co-sponsored by the Marshall School of Business are the same as Master of Business Administration program admission criteria.

Students interested in dual degree programs should apply to the specific MBA program suited to the individual's needs.

Juris Doctor/Master of Business Administration (J.D./MBA)

The Marshall School of Business in conjunction with the USC Gould School of Law offers a program leading to the degrees of Juris Doctor/Master of Business Administration.

Application

Applicants to this program must apply to both schools individually and take both the Graduate Management Admission Test (GMAT) or the Graduate Record Examinations (GRE) and the Law School Admission Test (LSAT). Applicants should apply either simultaneously to both programs or during the first year in the USC Gould School of Law. Certification for eligibility for the dual degree program must be provided by the Law School prior to admission to the dual degree program by the Marshall School of Business.

Program Requirements

The total number of units required for the MBA portion of the program is 48. Dual degree program students may not count courses taken outside the Marshall School of Business toward the 48 units.

To earn the J.D., all students (including dual degree program students) must complete 35 numerically graded law units at USC after the first year. The associate dean may make exceptions to this rule for students enrolled in Law School Honors Programs.

First Year: Required Law School courses (33 units).

Second Year: Required MBA courses and graduate business electives.

Third and Fourth Years: 43 units of law courses and graduate business electives sufficient to bring the total units completed in the Marshall School of Business to at least 48.

The J.D. and MBA degrees are awarded simultaneously upon completion of all program requirements.

Master of Business Administration/Master of Arts in East Asian Area Studies (MBA/M.A.)

The Marshall School of Business in conjunction with the East Asian Studies Center (USC Dornsife College of Letters, Arts and Sciences) offers a joint MBA/M.A. degree program that combines graduate business education with training in the cultures and societies of East Asia. Students may complete the degree on a full- or part-time basis.

Application

Students must apply to both the Marshall School of Business and the USC Dornsife College of Letters, Arts and Sciences. GRE scores are not required for admission to the dual degree program, but may be submitted in lieu of GMAT scores.

Program Requirements

Students enrolled in the program are required to complete a minimum of 72 units. All students must complete 48 units in the Marshall School of Business. In East Asian Area Studies (EASC), students have the option of taking five courses and writing a thesis (for a total of 24 units) or taking six courses and passing a comprehensive examination (for a total of 24 units).

Required courses that must be taken in the Marshall School of Business include: all required courses in an MBA program and graduate business electives sufficient to bring the total units completed in the Marshall School of Business to at least 48. Dual degree program students may not count courses taken outside the Marshall School of Business toward the 48 units.

See East Asian Area Studies, page xx, in the USC Dornsife College of Letters, Arts and Sciences for East Asian Area Studies course requirements and the foreign language requirement.

The MBA and M.A. degrees are awarded simultaneously upon completion of all program requirements.

Master of Business Administration/Master of Planning (MBA/MPL)

The Marshall School of Business in conjunction with the USC Price School of Public Policy offers a program leading to the degrees of Master of Business Administration and Master of Planning.

The Master of Business Administration/Master of Planning dual degree program enables students to understand the conduct and requirements of business, accounting, corporate and strategic planning, real estate marketing and finance. Students also gain expertise in public policy, city planning and the interpretation of government regulations. Exposure to both fields becomes an educational as well as professional asset for careers in either public service or private enterprise.

Application

Applicants to this program should apply to both schools simultaneously.

Program Requirements

A total of 84 units is required for the dual degree: 48 units of work in the Marshall School of Business and 36 units from the USC Price School of Public Policy. Students can complete the program on either a full- or part-time basis. The program normally requires five semesters of full-time study in residence.

Required courses that must be taken in the Marshall School of Business include: all required courses in an MBA program and graduate business electives sufficient to bring the total units completed in the Marshall School of Business to at least 48. Dual degree program students may not count courses taken outside the Marshall School of Business toward the 48 units.

See the USC Price School of Public Policy, page xx, for Master of Planning course requirements.

The MBA and MPL degrees are awarded simultaneously upon completion of all program requirements.

Master of Business Administration/Master of Real Estate Development (MBA/MRED)

The Master of Business Administration/Master of Real Estate Development dual degree program enables students to expand their skills in planning, land development, marketing, decision sciences, accounting, management, finance and economics. A more sophisticated real estate market makes this diversity of training essential for many students pursuing careers in real estate finance and development.

Completion of the MRED portion of the program requires that students have use of an approved laptop computer and demonstrate calculator and spreadsheet skills; a calculator and/or spreadsheet class is offered online.

Application

Students must apply to both the Marshall School of Business and the USC Price School of Public Policy. Please consult the Admission section of each school for specific requirements.

Program Requirements

This program normally requires two years (including summer) of full-time study in residence to complete.

A total of 82 units is required. Required courses include:

- all required courses in an MBA program;
- FBE 565 Economics of Urban Land Use: Feasibility Studies;
- FBE 588 Advanced Real Estate Law;
- additional graduate business electives sufficient to bring the total units completed in the Marshall School of Business to at least 48; and
- policy, planning, and development courses (34 units).

Dual degree program students may not count courses taken outside the Marshall School of Business toward the 48 units.

Comprehensive Examination: Students are required to complete a comprehensive examination administered by faculty members from both the Marshall School of Business and the USC Price School of Public Policy.

See page xx for MRED course requirements.

The MBA and the MRED degrees are awarded simultaneously upon completion of all program requirements.

Master of Business Administration/Master of Science in Gerontology (MBA/M.S.)

The MBA/M.S. dual degree program combines knowledge of the older population with the skills of business management. The program prepares graduates for a number of roles in both public and private sector organizations including the marketing of products or

services to seniors, human resource development with older workers and retirement benefits.

Application

Applicants to the MBA/M.S. in Gerontology should apply to both schools simultaneously.

Gerontology Requirements

The Master of Science in Gerontology requires 30 units of course and fieldwork, which cover the core content of the M.S. program. See page xx for the USC Davis School of Gerontology course requirements.

Business Administration Requirements

The Master of Business Administration component requires 48 units of credit. Required courses include:

- all required courses in an MBA program;
- MOR 548 Competitive Advantage Through People;
- one of the following marketing electives:
MKT 512 Marketing and Consumer Research,
MKT 525 Consumer Behavior,
MKT 560 Marketing Strategy and Policy;
- additional graduate business electives sufficient to bring the total units completed in the Marshall School of Business to at least 48.

Dual degree candidates may not count courses taken outside the Marshall School of Business for the 48 units.

The MBA and M.S. degrees are awarded simultaneously upon completion of all program requirements.

Master of Business Administration/Master of Science in Industrial and Systems Engineering (MBA/M.S.)

The Marshall School of Business in conjunction with the Daniel J. Epstein Department of Industrial and Systems Engineering offers a program leading to the degrees of Master of Business Administration/Master of Science in Industrial and Systems Engineering.

Application

Applicants to the MBA/M.S., Industrial and Systems Engineering program should apply to both schools simultaneously.

Program Requirements

This alternative requires 66 units for graduates of industrial and systems engineering undergraduate curricula and leads to both a Master of Science in Industrial and Systems Engineering and the Master of Business Administration.

The total number of units required for the MBA portion of the program is 48.

Required business courses include all required courses in an MBA program and graduate business electives sufficient to bring the total units completed in the Marshall School of Business to at least 48.

Dual degree program students may not count courses taken outside the USC Marshall School of Business toward the 48 units.

See page xx for industrial and systems engineering course requirements.

The MBA and the M.S. degrees are awarded simultaneously upon completion of all program requirements.

Master of Business Administration/Doctor of Education (MBA/Ed.D.)

The Marshall School of Business in conjunction with the USC Rossier School of Education offers a program leading to the degrees of Master of Business Administration and Doctor of Education.

The program emphasizes educational leadership and management competencies across the wide variety of education-related organizations in the public, non-profit and for-profit sectors and is designed to prepare students to assume executive leadership positions in these organizations, including schools, universities, educating businesses, regional, state and federal education agencies, education research institutions and private foundations with education missions. MBA/Ed.D. graduates will be prepared to improve the scope and quality of educational services to target populations through the application of management skills to the field of education and of education principles to business enterprises.

Application

Applicants to this program must apply to both schools individually and may choose to submit scores for both the Graduate Management Admission Test (GMAT) and the GRE.

Program Requirements

The program may be completed on a full-time or part-time basis. Full-time students should be able to complete the program in approximately four years.

The MBA portion of the degree program requires that the student complete the required courses in an MBA program and graduate business electives sufficient to bring the total units completed in the Marshall School of Business to 48. Dual degree program students may not count courses taken outside the Marshall School of Business toward the 48 units.

See the Rossier School of Education, page xx, for Ed.D. degree requirements.

The MBA and Ed.D. degrees are awarded simultaneously upon completion of all program requirements for both degrees.

Master of Business Administration/Doctor of Medicine (MBA/M.D.)

In response to the ongoing reorganization of health care delivery systems and the growing awareness of the impact of business decisions on health care, the Keck School of Medicine of USC and the Marshall School of Business jointly offer an innovative program for individuals seeking knowledge in both medicine and business administration. The program is designed to prepare its graduates to assume leadership in the design and management of health care systems.

Completion of the MBA/M.D. program spans five years. Interested students apply during their second or third year of medical school and begin required MBA courses following successful completion of the first two or three years of medical school. The remaining time is devoted to the clinical clerkships of the Keck School of Medicine and completion of elective courses in the Marshall School.

Application

MBA/M.D. students should apply during their second or third year of medical school in the Keck School of Medicine. Application to the MBA/M.D. does not require GMAT or GRE scores. All other requirements for admission to the Marshall MBA program must be fulfilled by the medical student for admission to the Marshall School. Only students who have successfully completed at least two years in the Keck School of Medicine will be considered for admission to the Marshall School of Business.

Program Requirements

At the conclusion of the program, students will have completed 48 units in the Marshall School of Business, including required and elective courses, and four years of courses in the Keck School of Medicine.

First and Second Years: Required medicine courses.

Third or Fourth Year: Required MBA courses and graduate business electives.

Remaining Years: Keck School of Medicine core, selective and elective clerkships, and graduate business elective courses sufficient to bring the total units completed in the Marshall School of Business to at least 48. Dual degree program students may not count courses taken outside the Marshall School of Business toward the 48 units.

The M.D. and the MBA degrees are awarded simultaneously upon completion of all program requirements.

Master of Business Administration/Doctor of Pharmacy (MBA/Pharm.D.)

Responding to the growing demand on pharmacists to be knowledgeable in both science and business administration, the USC School of Pharmacy and the Marshall School of Business offer the MBA/Pharm.D. dual degree program.

The program involves completion of the first year in the School of Pharmacy, the second in the Marshall School of Business and completion of the balance of the dual degree program over the final three years.

Admission Requirements

Applicants to this program should apply during the first year of pharmacy studies. Only students who have successfully completed one year in the School of Pharmacy will be considered for admission to the Marshall School of Business.

Program Requirements

A total of 48 units of business course work is required. Dual degree program students may not count courses taken outside the Marshall School of Business toward the 48 units.

First Year: Required Pharmacy School courses.

Second Year: Required MBA courses and graduate business electives.

Third to Fifth Years: 108 units of Pharmacy courses and graduate business electives sufficient to bring the total

units completed in the Marshall School of Business to at least 48.

The MBA/Pharm.D. degrees are awarded simultaneously upon completion of the School of Pharmacy and the Marshall School of Business requirements.

Master of Business Administration/Master of Arts in Jewish Nonprofit Management (MBA/M.A.)

In cooperation with Hebrew Union College-Jewish Institute of Religion's School of Jewish Nonprofit Management (formerly the HUC-JIR School of Jewish Communal Service), the Marshall School of Business offers the dual degree program Master of Business Administration/Master of Arts in Jewish Nonprofit Management. This degree program prepares students to apply business and management concepts to the non-profit sector.

Application

Applicants to the MBA/Master of Arts in Jewish Nonprofit Management program should apply to the Marshall School of Business and to the School of Jewish Nonprofit Management at the Hebrew Union College-Jewish Institute of Religion concurrently.

Degree Requirements

For the Marshall School portion of the dual degree program: all courses required in an MBA program and graduate business electives sufficient to bring the total units completed in the Marshall School of Business to at least 48. Dual degree program students may not count courses taken outside the Marshall School of Business toward the 48 units.

Students must also complete 47 units in the HUC-JIR School of Jewish Nonprofit Management to complete the M.A. in Jewish Nonprofit Management.

Sample Student Program

Summer I, Fall, Spring: Hebrew Union College-required and elective courses

Summer II, Fall, Spring: Hebrew Union College-required and elective courses

Fall, Spring: Marshall School-required and elective courses

Fall: Marshall School-graduate business electives

The MBA and the M.A. degrees are awarded simultaneously upon completion of their respective degree requirements.

Master of Business Administration/Master of Social Work (MBA/MSW)

The Master of Business Administration/Master of Social Work dual degree program develops knowledge and skills in working with individuals, families and groups, as well as organizational dynamics, marketing, decision sciences, accounting and human relations. Students interested in working in the management of human services and not-for-profit organizations will develop knowledge of human resources, philanthropic and corporate social responsibility, organizational development and information management.

Application

Prospective students must apply to both the Marshall School of Business and the USC School of Social Work.

Program Requirements

The MBA/MSW degree program requires completion of a total of 96 units (48 in the Marshall School of Business and 48 in the School of Social Work) and is typically completed in a three-year period, including summers.

Students in this dual degree program must select the World of Work concentration in the second year of their social work program and enroll in three required World of Work concentration courses (9 units), and 686ab Field Practicum (8 units). Course requirements in the Marshall School of Business include all courses required for an MBA program and graduate business electives sufficient to bring the total units completed in the Marshall School of Business to at least 48. Dual degree program students may not count courses taken outside the Marshall School of Business toward the 48 units. See the School of Social Work, page xx, for MSW course requirements.

The MBA and the MSW degrees are awarded simultaneously upon completion of all program requirements.

Master of Management Studies

The Master of Management Studies (MMS) is designed to provide those who have already completed the equivalent of the first year of an accredited traditional two-year MBA with an opportunity to pursue further study in an area of specialization currently available to Marshall graduate students.

Completion of the Master of Management Studies degree requires a minimum of 26 graduate units for all candidates — up to 24 units of course work and 2–5 units of Field Research (592), Independent Research (593), and/or Consulting Project in Business (597).

Classes applicable to the degree are offered during both daytime and evening hours. The degree may be completed on either a full- or part-time basis. International students should expect to complete the program within two semesters or one calendar year.

Prospective applicants are encouraged to visit the Master of Management Studies Website at marshall.usc.edu/mms for more information about this very flexible curriculum. Applicants interested in accounting or taxation should apply for admission to the Master of Accounting or the Master of Business Taxation program offered by the Leventhal School of Accounting. Information about the areas of concentration offered to Marshall graduate students is available at marshall.usc.edu/ecg.

Admission Requirements

Applicants may apply for admission to begin the program in the summer term or the fall or spring semesters. Application deadlines vary by semester, citizenship and registration goals. Details are available under the Dates and Deadlines tab at marshall.usc.edu/mms.

The equivalent of a four-year bachelor's degree is required for admission. Additionally, applicants must have completed the equivalent of the first year of a traditional two-year MBA accredited by the AACSB, EQUIS, ACBSP, AOCTE, IACBE or AMBA. Successful applicants should have earned a GPA of 3.3 or greater in their graduate

business course work and scored in at least the 80th percentile on the GMAT or the GRE.

Application Procedure

Submit an online application to the MMS program through the Marshall School of Business Admissions Website (app.applyyourself.com/?id=USC-MBA). International applicants are advised to see the instructions for international students published in the USC Graduate Admissions Application (usc.edu/admission/graduate/international/application.html).

For additional information, visit marshall.usc.edu/mms, contact Management.Studies@marshall.usc.edu or call (213) 740-0671.

Program Structure and Unit Requirements

Master of Management Studies applicants are urged to consider areas of specialization available to Marshall graduate students published at marshall.usc.edu/ecg. The applicant is asked to identify areas of interest as part of the application process, but is free to choose course work from the full range of graduate electives offered by Marshall.

An evaluation of work previously completed determines if specific content areas are missing. If it is determined that preliminary courses are needed, the number of units needed to complete the Master of Management Studies degree will increase.

Completion of the Master of Management Studies degree requires a minimum of 26 graduate units for all candidates — up to 24 units of course work and 2–5 units of Field Research (592), Independent Research (593) or Consulting Project in Business (597).

None of the GSBA-prefixed classes required for completion of a Marshall MBA program may be applied toward the Master of Management Studies unless they are required to update prior work and are added to the 26-unit total.

No courses numbered lower than 500 may be included in this program. No more than two courses or eight units may be taken in graduate course work outside the Marshall School of Business.

A minimum of two units of Field Research (592), Independent Research (593) or Consulting Project in Business (597) must be included in the proposed program. The project is intended to provide a capstone experience culminating in a report in the area of specialization. The project will be conducted under the direction of an individual faculty member from the department offering the student's area of specialization.

Master of Science in Business Administration

The Master of Science in Business Administration (M.S.) is designed to provide those who have already completed an MBA with an opportunity to pursue further study in an area of specialization currently available to Marshall MBA students. The degree is available only to those holding MBA degrees from institutions accredited by the Association to Advance Collegiate Schools of Business (AACSB). It may be completed on either a full- or part-time basis. Classes applicable to the degree are offered during both daytime and evening hours.

Prospective applicants are encouraged to visit the M.S. in Business Administration Website at marshall.usc.edu/msba for more information about this very flexible curriculum.

marshall.usc.edu/msba for more information about this very flexible curriculum.

Admission Requirements

Applicants may apply for admission to begin the program in the summer term or the fall or spring semesters. Application deadlines vary by semester, citizenship and registration goals. Details are available under the Calendar tab at marshall.usc.edu/msba.

Successful applicants should have earned a GPA of 3.3 or greater in their MBA course work, scored at least as well as an average Marshall MBA student on the GMAT or the GRE and have significant full-time work experience.

Application Procedure

Submit an online application to the M.S. program through the Marshall School of Business Admissions Website (app.applyyourself.com/?id=USC-MBA). International applicants are advised to see the instructions for international students published in the USC Graduate Admissions Application (usc.edu/grad).

- Current USC students and USC MBA alumni are not required to submit an application fee, new test scores or transcripts to verify degrees earned prior to their attendance at USC.
- Applicants who completed the MBA at an institution other than USC must submit all application documentation identified in the online application instructions including the application fee, official GMAT or GRE scores and transcripts.

For additional information, visit marshall.usc.edu/msba, contact MSBA.program@marshall.usc.edu or call (213) 740-0671.

Program Structure and Unit Requirements

M.S. in Business Administration applicants are invited to consider areas of specialization available to Marshall MBA students. While the student identifies an area of interest as part of the application process, final determination of course work requirements is made under the guidance of and subject to approval by a faculty adviser. The academic department reviewing the application recommends a faculty adviser for the new student, but applicants may request a specific faculty adviser from among the faculty of the Marshall School of Business.

Together the student and the faculty adviser determine which courses the student must complete. An evaluation of work previously completed determines if prior work needs updating to prepare for new course work. If it is determined that preliminary courses are needed, the number of units needed to complete the Master of Science degree will increase. The student's program is then documented on an official program of study and filed with the M.S. program adviser.

Completion of the Master of Science degree requires a minimum of 26 graduate units for all candidates — up to 24 units of course work in the area of specialization and a minimum of 2 units of Directed Research, Field Research, Independent Research or Consulting Project.

None of the GSBA prefixed classes required for completion of a Marshall MBA program may be applied toward the Master of Science in Business Administration unless they are required to update prior work and are added to the 26-unit total.

No courses numbered lower than 500 may be included in this program. No more than two courses or 8 units may be taken in graduate course work outside the Marshall School of Business.

A minimum of two units of Directed Research (590), Field Research (592), Independent Research (593) or Consulting Project (597) supervised by a Marshall faculty member must be included in the proposed program. The project is intended to provide a capstone experience culminating in a report in the area of specialization. The project will be conducted under the direction of an individual faculty member from the Marshall department in which the area of specialization is taken.

Master of Science in Business Research

The Master of Science in Business Research is an alternative available only to Marshall Ph.D. students.

The curriculum involves a flexible program of study and research guided by faculty of the Marshall School culminating in the completion of a research project and publishable paper in an area of specialization.

Admission

Marshall does not accept applications directly to this program. A student admitted to the Marshall Ph.D. program may later request conversion or be invited by the faculty to complete the master's degree in lieu of the Ph.D. Requests for conversion are subject to approval by the Marshall vice dean who oversees the Ph.D. program.

For more information, contact the Ph.D. program office for a referral to the MSBR adviser.

Program Requirements

The degree requires a minimum of 33 graduate units for all candidates — 30 units of course work and 3 units of Directed Research or GSBA 610 Seminar in Business Research.

Upon admission to the Ph.D. program, the student works with a faculty adviser who oversees the selection of course work, taking into account the student's prior academic preparation. The curriculum requires completion of Ph.D. program core courses focusing on research methods and theory in an area of specialization. Methods course work completed at USC must include at least one course in microeconomics or behavioral science, one course in statistics and one course in research design. Additional courses are drawn from the Marshall School of Business and other participating departments including economics, psychology, mathematics, sociology, engineering, communication and others.

Three units of Directed Research (590) or GSBA 610 Seminar in Business Research are required to provide a capstone experience culminating in a research report of publishable quality in the area of specialization. The research will be conducted under the direction of an individual faculty member from the department in which the area of specialization is taken.

No courses numbered lower than 500 may be applied in this program. All courses applied to the first 30 units must be letter-graded and completed in residence at USC. No transfer units or graduate units from a degree previously completed at USC can be applied to the M.S. in Business Research.

Master of Medical Management

This program is designed for physicians, three-five years out of residency, who are currently employed in the health care industry. Its structure includes intensive residential periods with significant project work required between residential periods. Non-residential instruction is supported via distance-learning tools.

Applications are due by November 30 for a program start date in late January. The application is available online at app.applyyourself.com/?id=USC-MBA. For additional information, contact the Office of Executive Education at (213) 740-8990 or by email at mmm@marshall.usc.edu.

This program requires 33 units that will be taken in lockstep fashion. These courses are thematic semesters that are interdisciplinary in nature.

SPRING		UNITS
GSBA 561	Evaluating Market Performance	9

SUMMER		UNITS
GSBA 562	Management of Operations	11

FALL		UNITS
GSBA 572	Strategic Planning for Growth	11

SPRING		UNITS
BAEP 549	Initiating New Ventures	2

Total units: 33

Digital Supply Chain Management

The Digital Supply Chain Management program includes one master's degree and three graduate certificates offering individuals an opportunity to expand their knowledge of the rapidly expanding uses of technology in the management of global supply chains.

Admission Requirements

In addition to the general admission requirements, applicants should have significant full-time work experience. Admission decisions are based on consideration of the applicant's previous academic record, resume, letters of recommendation and responses to several questions included in the application.

Application Procedure

Prospective students may apply to begin the programs in the fall or spring semester. Applications are submitted online through the Marshall School of Business Admissions Website at app.applyyourself.com/?id=USC-MBA. International applicants are advised to see the instructions for international students published in the USC Graduate Admissions Application Booklet.

A complete application includes the online application form, an application fee, responses to several short-answer questions, two letters of recommendation and transcripts from all institutions attended since the applicant last applied to USC.

- Current USC students and USC alumni are not required to submit an application fee, new GMAT or GRE scores or transcripts to verify degrees earned prior to their attendance at USC.

- All other applicants must submit all documentation identified in the online application instructions including the application fee, official GMAT or GRE scores and transcripts.

For additional information, contact Supply.Chain@marshall.usc.edu or call (213) 740-0671.

Master's Degree Requirements

The Master of Digital Supply Chain Management degree requires 30 units including four required courses plus 18 units of course work chosen from a list of electives. The four required courses should be completed prior to the electives.

Students who have taken elsewhere one or more of the required classes may petition to replace these classes by appropriately related courses offered by the Master of Digital Supply Chain Management program. Such a replacement must be approved by the student adviser and the chair of the program.

REQUIRED COURSES		UNITS
GSBA 524	Managerial Statistics	3
GSBA 534	Operations Management	3
IOM 581	Supply Chain Management	3
ISE 583	Enterprise Wide Information Systems	3

ELECTIVES		UNITS
Select 18 units from the following:		
CE 589	Port Engineering: Planning and Operations	3
IOM 502	Operations Strategy	3
IOM 504	Strategic Sourcing	3
IOM 520	Logistics Management	3
IOM 522	Applied Time Series Analysis for Forecasting	3
IOM 528	Data Warehousing, Business Intelligence, and Data Mining	3
IOM 537	Global Businesses and Markets: Strategies Enabled by Technology	3
IOM 538	Information System Strategy	3
IOM 540	Managing Electronic Commerce	3
IOM 547	Designing Spreadsheet-Based Business Models	3
IOM 580	Project Management, or Engineering Project Management	3
ISE 513	Inventory Systems	3
ISE 530	Introduction to Operations Research	3
ISE 532	Network Flows	3
ISE 580	Advanced Concepts in Computer Simulations	3
SAE 551	Lean Operations	3
Total units:		30

Graduate Certificate in Information Systems and Supply Chain Management**REQUIRED COURSES*** **UNITS**

Select 15 units from the following:

GSBA 554	Digital Strategies for Sustainability in Global Markets	3
GSBA 556	Business Models for Interactive Digital Media and Services	3
IOM 528	Data Warehousing, Business Intelligence, and Data Mining	3
IOM 537	Global Businesses and Markets: Strategies Enabled by Technology	3
IOM 543	Global Business Issues in the Networked Digital Industry	3
IOM 551	Digital Transformation in the Global Enterprise	3
IOM 581	Supply Chain Management	3
ISE 583	Enterprise Wide Information Systems	3

Graduate Certificate in Optimization and Supply Chain Management**REQUIRED COURSES*** **UNITS**

Select 15 units from the following:

CE 589	Port Engineering: Planning and Operations	3
IOM 522	Applied Time Series Analysis for Forecasting	3
IOM 547	Designing Spreadsheet-Based Business Models	3
IOM 580	Project Management, or	
ISE 515	Engineering Project Management	3
IOM 581	Supply Chain Management	3
IOM 582	Service Management: Economics and Operations	3
IOM 583	Operations Consulting	3
IOM 584	Global Operations Management	3
ISE 513	Inventory Systems	3
ISE 530	Introduction to Operations Research	3
ISE 532	Network Flows	3
ISE 580	Advanced Concepts in Computer Simulations	3
ISE 583	Enterprise Wide Information Systems	3
SAE 551	Lean Operations	3

Graduate Certificate in Supply Chain Strategy**REQUIRED COURSES*** **UNITS**

Select 15 units from the following:

CE 589	Port Engineering: Planning and Operations	3
IOM 504	Strategic Sourcing	3
IOM 538	Information Systems Strategy	3
IOM 551	Digital Transformation in the Global Enterprise	3
IOM 581	Supply Chain Management	3

IOM 582	Service Management: Economics and Operations	3
IOM 583	Operations Consulting	3
IOM 584	Global Operations Management	3

**Students who begin one of the graduate certificate programs and subsequently wish to complete the master's degree instead must apply for admission to the master's degree program prior to completing the certificate program and, if admitted to the master's degree program, will be withdrawn from the certificate program.*

For current USC graduate students, courses credited to graduate certificate programs may be completed in conjunction with course work required for a graduate degree program in which the student is already enrolled. Applicability of courses to the student's primary degree program is determined by the student's home department. For USC alumni, courses completed in conjunction with the individual's prior degree may not be credited toward a certificate, but may be applied toward the master's degree. If necessary, appropriate substitutions for required courses will be determined and documented by the program director.

Successful completion of a graduate certificate program is acknowledged by a certificate awarded by the university.

Master of Science in Global Supply Chain Management

The Master of Science in Global Supply Chain Management program is designed to facilitate the needs of professionals in the U.S. and around the world who wish to expand their knowledge of the rapidly-changing world of global supply chain management.

Courses are transmitted from studio classrooms via an extensive internet-delivery system to enable the students to access their classes anytime, from anywhere. Lectures are made accessible for the entire semester, allowing students to review a complex lesson or prepare for exams. All classes are taught in English. Using the internet, students are required to work in teams and are encouraged to interact with the instructors and their classmates.

Face-to-face discussion sessions and instructional activities are available at partner institutions to enhance the individual's learning opportunities. Two international travel experiences to global distribution hubs are included in the program. Participation in both trips is required for graduation. Some courses may require in-person midterm and final examinations. These exams will be administered in cities near student population concentrations, requiring that students travel to reach these locations.

Admission Requirements

In addition to the general admission requirements, applicants should have at least three years of full-time work experience. Admission decisions are based on consideration of the applicant's previous academic record, resume, letters of recommendation, responses to several essay questions and an interview. TOEFL or PTE scores and GMAT or GRE test scores are not required, but are recommended, for this program. Applicants will

be interviewed as needed to ensure sufficient English language capabilities.

Application Procedure

Applications are due by April 1 for fall semester enrollment.

Submit an online application to the program through the USC Marshall graduate admissions Website at [app. applyyourself.com/?id=usc-mba](http://applyyourself.com/?id=usc-mba) or marshall.usc.edu/admissions/applyonline. International applicants are advised to view the information for international students published at usc.edu/admission/graduate.

A complete application includes the online application form, an application fee, responses to several questions, three letters of recommendation, and copies of transcripts from all institutions attended since the applicant last applied to USC.

- Current USC students and USC alumni are not required to submit an application fee or transcripts to verify degrees earned prior to their attendance at USC.
- All other applicants must submit all documentation identified in the online application instructions including the application fee and copies of transcripts.
- Applicants who completed degrees at institutions outside of the United States should submit official documents verifying their degrees through the International Education Research Foundation (ierf.org/usc) or World Education Services (wes.org/usc) as well as official TOEFL or PTE and GMAT or GRE test scores, if available.

For additional detailed information, visit marshall.usc.edu/msgscm, email MS.GSCM@marshall.usc.edu or call (213) 821-4079.

Degree Requirements

The Master of Science in Global Supply Chain Management degree requires 24 units.

REQUIRED COURSES		UNITS
GSBA 534	Operations Management	3
IOM 505	Sustainable Supply Chains	1.5
IOM 506	Sourcing and Supplier Management	1.5
IOM 520	Logistics Management	3
IOM 521	Enterprise Systems	3
IOM 557ab	Global Supply Chain Management in International Settings	1.5-1.5
IOM 580	Project Management	3
IOM 581	Supply Chain Management	3
IOM 588	International Perspectives in Global Supply Chain Management	3
Total units:		24

Master of Business for Veterans

This program is offered in an intensive format for veterans who wish to gain formal business knowledge and develop critical thinking skills to manage or grow a business. Significant project and course work is completed primarily through residential sessions with supplemental content delivered via distance learning. Class sessions meet over 16 full-day sessions each semester for

two semesters with minimal interruption to the careers of working veterans. The program is offered on the University Park Campus in downtown Los Angeles.

A new class will be admitted each fall, spring and summer. Application information is available online at marshall.usc.edu/MBV. For additional information, contact the Marshall Office of Executive Education at (213) 740-8990 or by email at mbv@marshall.usc.edu.

This program requires 25 units that will be taken in lockstep fashion. These courses are thematic semesters that are interdisciplinary in nature.

FALL		UNITS
BAEP 551	Introduction to New Ventures	3
GSBA 561	Evaluating Market Performance	9
SPRING		UNITS
BAEP 549	Initiating New Ventures	2
GSBA 572	Strategic Planning for Growth	11
Total units:		25

Master of Management in Library and Information Science

The Master of Management in Library and Information Science is designed to educate professional librarians for leadership from every level of the organization in academic, urban and corporate environments. Graduates will identify and analyze critical issues and leverage resources and expertise to build community assets.

The program provides a solid foundation of course work followed by elective options culminating in the capstone project. Each semester students enroll in LIM 591 Research and Professional Applications in which they investigate critical issues, connect with leaders, undertake research with faculty and otherwise extend their learning and understanding.

The capstone project provides an opportunity for students to demonstrate their learning during the MMLIS experience and achievement of the core competencies for the program.

Courses are offered entirely online each fall and spring semester and during the summer. The program will be offered initially through small cohorts.

Application

To qualify for admission to the MMLIS program, prospective students must hold a bachelor's degree from an accredited institution and have earned an undergraduate GPA of at least 3.0. (Neither the GMAT nor the GRE is required for application/admission to this program.) International applicants are required to submit a TOEFL score and must have earned a score of at least 100, with at least 20 in each section. (Students who have completed their entire bachelor's degree program at regionally accredited universities located in the United States or in another country in which English is both the language of instruction and the official language of the country are exempt.) Proof of financial support is required of admitted international applicants.

Applicants will also submit a professional resume, a statement of purpose, three letters of recommendation and transcripts from each institution of higher education attended.

For more information and pre-screening visit librarysciencedegree.usc.edu, write to MMLIS, Program@marshall.usc.edu or contact an enrollment advisor at (877) 830-8647.

Curriculum

The MMLIS degree requires 40 semester units — 28 units of required foundation courses, 9 units of electives, and 3 units of capstone. Foundation courses, other than LIM 591, must be completed prior to taking electives. The program allows for specialization by environment within courses.

Required Foundation Courses (28 units)

COURSE		UNITS
GSBA 502	Management Communication for Leaders	3
LIM 500	Fundamentals of Library and Information Science	3
LIM 501	Fundamentals of Library Leadership and Management	3
LIM 502	Collection Development and Management	3
LIM 503	Organization, Access and Retrieval of Information	3
LIM 504	Research Methods in Library and Information Management	3
LIM 591	Research and Professional Applications (2 units x five semesters)	10

Electives (9 units)

Students may undertake a general program of study or may choose to specialize in academic environments (college/university libraries), urban environments (public libraries) or digitization and electronic records, including in the corporate/government environment, through both required and elective courses.

Recommended Specializations

ACADEMIC LIBRARIANSHIP		UNITS
LIM 510	Academic Librarianship	3
LIM 511	Instructional Strategies for Information Professionals	3
LIM 512	Instructional Technologies for Educators	3
LIM 513	Multicultural Information Perspectives	3

EDUCATIONAL TECHNOLOGY/DIGITAL LIBRARIANSHIP		UNITS
LIM 520	Library Information Systems Analysis and Design	3
LIM 521	Database Management Systems for Information Professionals	3
LIM 522	Metadata and Taxonomies	3
LIM 523	Information Delivery in the Digital Environment	3

LIBRARY LEADERSHIP		UNITS
LIM 530	Library Resource Management	3
LIM 531	Global Perspectives in Librarianship	3

LIM 533	Operations Research in Libraries	3
LIM 534	Library Fundraising and Development	3

Capstone (3 units)

LIM 598	Capstone in Library and Information Management	3
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Total units required for the degree: 40

Graduate Certificate in Business Fundamentals for Non-Business Professionals

The Graduate Certificate in Business Fundamentals for Non-Business Professionals is designed to provide managers and business owners for whom an MBA is not a viable option with a basic graduate-level introduction to successful business policies and practices.

Admission

All certificate students must meet the same admission requirements as degree seeking students.

In addition to the general admission requirements, applicants should have earned an undergraduate GPA of at least 3.4 or a GPA in graduate course work of at least 3.2.

GRE or GMAT scores are generally required. A completed graduate degree may be accepted in lieu of test scores at the discretion of the admissions committee.

Prospective students may apply to begin the program in the fall, spring or summer term. Applications are submitted online through the USC Marshall School of Business admissions Website at marshall.usc.edu/admissions/applyonline. A complete application includes the online application form, responses to essay questions, letters of recommendation, and official transcripts from all colleges and universities attended, whether a degree was completed or not. Current USC students and alumni need to submit transcripts from only those institutions attended since the applicant last applied to USC. The application fee is not required of current USC students or USC alumni.

For more information, contact the USC Marshall School of Business at (213) 740-0671 or Bus.Fundamentals@marshall.usc.edu.

Program Requirements

The program requires successful completion of the following 19-unit program with a minimum cumulative GPA of at least 3.0 for all course work applied to the certificate and an overall graduate GPA at USC of at least 3.0.

REQUIRED (16 UNITS)		UNITS
ACCT 509	Concepts of Financial and Management Accounting	4
GSBA 520	Business Fundamentals for Non-Business Professionals	3
GSBA 523*	Communication for Management, or	
BUCO 503	Advanced Managerial Communication	3

GSBA 528	Marketing Management, or one 3-unit MKT course from a list of electives published on the program Website and available from the program adviser	3
GSBA 543	Managerial Perspectives, or one 3-unit MOR course from a list of electives published on the program Website and available from the program adviser	3

ELECTIVE (3 UNITS) UNITS

Select one additional course from those identified above or from a list of elective options published on the program Website and available from the program adviser. The elective selected may not duplicate prior graduate course work and must be approved by the program director. Enrollment in some courses may require additional preparatory course work to satisfy prerequisites, subject to approval of the instructor.

**Students in the Master of Communication Management, Master of Arts in Global Communication and Master of Arts in Strategic Public Relations programs may substitute BAEP 551 Introduction to New Ventures (3). Students who have extensive presentation experience may be allowed to substitute BUCO 533 Managing Communication in Organizations (3) with permission from the program director.*

For current USC graduate students, courses credited to the Graduate Certificate in Business Fundamentals for Non-Business Professionals may be completed in conjunction with course work required for a program in which the student is already enrolled. Applicability of these courses to the student's primary degree program is determined by the student's home department.

For USC alumni, courses completed in conjunction with an individual's prior degree may not be credited toward the certificate. Appropriate substitutions for required courses will be determined and documented by the program director.

Successful completion of the program is acknowledged by a certificate awarded by the university.

Graduate Certificate in Financial Analysis and Valuation

The Graduate Certificate in Financial Analysis and Valuation program is designed to enhance the individual's graduate education through a concentrated curriculum in financial accounting, financial analysis, valuation, credit analysis, and financial instruments and markets.

Admission

To qualify for admission to the program, individuals must have completed basic graduate-level (post-baccalaureate) courses in microeconomics, macroeconomics, and corporate finance comparable to the first-year MBA curriculum while earning a minimum graduate GPA of 3.3.

Prospective students may apply to begin the programs in the fall, spring or summer term. Applications are submitted online at app.applyyourself.com/?id=USC-MBA. A complete application includes the

online application form, responses to several essay and additional information questions, letters of recommendation and transcripts from any institutions attended since the applicant last applied to USC. (The application fee is not required of current USC students and USC alumni. Letters of recommendation are not required of current USC MBA students and USC MBA alumni.)

For more information, contact the USC Marshall School of Business at (213) 740-0671 or FinancialAnalysis@marshall.usc.edu.

Program Requirements

The program requires successful completion of one of the following 15-unit modules with a minimum GPA of at least 3.6 for all courses applied to the certificate.

Corporate Finance Option

REQUIRED UNITS

FBE 529	Financial Analysis and Valuation	3
ACCT 572	Corporate Accounting and Reporting	3

At least two of the following:

ACCT 581	Financial Statement Analysis	3
FBE 531	Corporate Financial Policy and Corporate Governance	3
FBE 532	Corporate Financial Strategy	3

At least one of the following:

ACCT 581	Financial Statement Analysis	3
FBE 527	Entrepreneurial Finance: Financial Management for Developing Firms	3
FBE 531	Corporate Financial Policy and Corporate Governance	3
FBE 532	Corporate Financial Strategy	3
FBE 558	Legal Environment of Business and Corporate Governance	3
FBE 559	Management of Financial Risk	3

Investment Management Option

REQUIRED UNITS

FBE 529	Financial Analysis and Valuation	3
FBE 555	Investment Analysis and Portfolio Management	3

At least one of the following:

ACCT 572	Corporate Accounting and Reporting	3
ACCT 581	Financial Statement Analysis	3

At least two of the following:

ACCT 572	Corporate Accounting and Reporting	3
ACCT 581	Financial Statement Analysis	3
FBE 535	Applied Finance in Fixed Income Securities	3
FBE 540	Hedge Funds	3
FBE 543	Forecasting and Risk Analysis	3
FBE 554	Trading and Exchanges	3
FBE 559	Management of Financial Risk	3

FBE 589	Mortgages and Mortgage-Backed Securities and Markets	3
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Student Investment Fund Program

Under the auspices of the Center for Investment Studies is the Student Investment Fund (SIF) program. During this year-long seminar in applied portfolio management, a select group of students learn the theory and practice of investment management by managing actual USC endowment funds.

Students who are selected to participate in the Marshall Student Investment Fund (SIF) program are required to complete the following:

REQUIRED UNITS

FBE 529	Financial Analysis and Valuation	3
FBE 535	Applied Finance in Fixed Income Securities	3
FBE 553ab	Applied Portfolio Management	3-3

At least one of the following:

ACCT 572	Corporate Accounting and Reporting	3
ACCT 581	Financial Statement Analysis	3

For current USC graduate students, courses credited to the Graduate Certificate in Financial Analysis and Valuation may be completed in conjunction with course work required for the program in which the student is already enrolled. Applicability of these courses to the student's primary degree program is determined by the student's home department. Current MBA students may apply all 15 units of the graduate certificate program to their MBA degree. For USC alumni, courses completed in conjunction with the individual's prior degree may not be credited toward the certificate. Appropriate substitutions for required courses will be determined and documented by the program director.

Successful completion of the program is acknowledged by a certificate awarded by the university.

Graduate Certificate in Management Studies

The Graduate Certificate in Management Studies is designed to provide those who have already completed the equivalent of the first year of a traditional two-year MBA with an opportunity to pursue further study in an area of specialization currently available to Marshall graduate students.

Completion of the Graduate Certificate in Management Studies requires a minimum of 12 graduate units for all candidates — usually four, 3-unit courses.

The certificate may be completed on either a full- or part-time basis. Classes applicable to the certificate are offered during both daytime and evening hours.

Prospective applicants are encouraged to visit the Graduate Certificate in Management Studies Website at marshall.usc.edu/gcms for more information about this very flexible curriculum. Applicants interested in accounting or taxation should consider applying for admission to the Master of Accounting or the Master of Business Taxation program offered by the USC Leventhal School of Accounting. Information about the areas

of concentration offered to Marshall graduate students is available at marshall.usc.edu/ecg.

Admission Requirements

Applicants may apply for admission to begin the program in the summer term or the fall or spring semesters. Application deadlines vary by semester, citizenship and registration goals. Details are available under the Calendar tab at marshall.usc.edu/gcms.

The equivalent of a four-year bachelor's degree is required for admission. Additionally, applicants must have completed the equivalent of the first year of a traditional two-year MBA accredited by the AACSB, EQUIS, ACBSP, AOCTE, IACBE or AMBA. Successful applicants should have earned a GPA of 3.3 or greater in their graduate business course work and scored at least as well as an average Marshall MBA student on the GMAT.

Application Procedure

Submit an online application through the Marshall School of Business Admissions Website (app.applyyourself.com/?id=USC-MBA). International applicants are advised to see the instructions for international students published in the USC Graduate Admissions Application (usc.edu/admission/graduate/international/application.html).

For additional information, visit marshall.usc.edu/gcms, contact Management.Studies@marshall.usc.edu or call (213) 740-0671.

Program Structure and Unit Requirements

Applicants are urged to consider areas of specialization available to Marshall graduate students published at marshall.usc.edu/ecg. The applicant is asked to identify areas of interest as part of the application process, but is free to choose course work from the full range of graduate electives offered by Marshall.

An evaluation of work previously completed determines if specific content areas are missing. If it is determined that preliminary courses are needed, the number of units needed to complete the Graduate Certificate in Management Studies certificate will increase.

Completion of the Graduate Certificate in Management Studies certificate requires a minimum of 12 graduate units for all candidates.

None of the GSBA-prefixed classes required for completion of a Marshall MBA program may be applied toward the certificate unless they are required to update prior work and are added to the 12-unit total.

No courses numbered lower than 500 may be included in this program. All courses applied toward the certificate must be taken within the Marshall School of Business. Acceptable course prefixes include ACCT, BAEP, BUCO, FBE, GSBA, IOM, MKT and MOR.

Successful completion of the program is acknowledged by a certificate awarded by the university.

Graduate Certificate in Technology Commercialization

The Graduate Certificate in Technology Commercialization is designed to let students experience the entire spectrum of the commercialization process — invention, product development, technical and market feasibility analysis, intellectual property acquisition, business planning and venture funding.

To qualify for admission, current USC students should have completed the equivalent of one year of graduate study at USC (at least 12 units for part-time students) and earned a minimum cumulative GPA of 3.0. Individuals holding graduate degrees from USC or other institutions are welcome to apply.

Prospective students may apply to begin the program in the fall, spring or summer term. Applications are submitted online through the USC Marshall School of Business Admissions Website at app.applyyourself.com/?id=USC-MBA. A complete application includes the online application form, responses to several essay questions, letters of recommendation and transcripts from any institutions attended since the applicant last applied to USC. (The application fee is not required of current USC students and USC alumni.) For more information: (213) 740-0505; Bridge Hall 1, USC, Los Angeles, CA 90089-0801; (213) 740-2976 (fax); entrepreneur@marshall.usc.edu.

After the Lloyd Greif Center has received the complete application, it will contact the applicant to confirm receipt of the application and, if appropriate, to schedule an interview. In their review of applications, the admission committee members consider the applicant's completed academic work, evidence of potential business leadership, motivation, work experience and competitiveness within the current application pool.

Three required courses and one elective (12 units) must be completed to earn the certificate. The student must maintain both a certificate and overall GPA of at least 3.0 throughout the program.

REQUIRED COURSES		UNITS
BAEP 556	Technology Feasibility	3
BAEP 557	Technology Commercialization	3
BAEP 559	Investing in New Ventures	3
ELECTIVES — SELECT ONE		UNITS
BAEP 553	Cases in New Venture Management	3
BAEP 555	Management of Rapidly Growing Ventures	3
ISE 515	Engineering Project Management	3
ISE 555	Invention and Technology Development	3
ISE 585	Strategic Management of Technology	3
MOR 561	Strategies in High-Tech Businesses	3

For current USC graduate students, courses credited to the Graduate Certificate in Technology Commercialization may be completed in conjunction with course work required for the program in which the student is already enrolled. Applicability of these courses to the student's primary degree program is determined by the student's home department. For USC alumni, courses completed in conjunction with the individual's prior degree may not be credited toward the certificate.

Successful completion of the program is acknowledged by a certificate awarded by the university.

Academic Policies — Master's Programs

Waivers

Subject waiver of required courses may be granted to students based on prior academic work subject to university policy limitations and in some cases by examination. All waived courses must be replaced with electives.

Further information regarding the waiver policy in the Marshall School of Business may be obtained from the program adviser for the applicable degree program following admission.

Change of Degree Program

Students who are currently enrolled in one degree program who wish to change their degree status to another program must formally apply for admission to that program through the Admission Office for the applicable program. Details concerning individual student requirements in other degree programs may be obtained by contacting the applicable program office.

Continuous Enrollment/Leave of Absence/Withdrawal/Reinstatement

Once admitted to a graduate degree program, the student must enroll at USC each fall and spring semester each year until she or he has satisfactorily completed all degree requirements. MBA.PM students must enroll at USC each fall and spring semester and summer session each year until they have satisfactorily completed all degree requirements.

If for military, medical, religious or job-related reasons a student must skip a semester, the student must petition for a leave of absence. The petition should be submitted to the student's program adviser no later than the first day of class for the semester of the leave. Leave of absence request forms are available by electronic mail, fax or hard copy.

If granted, the period of leave is not counted in the time allowed for the completion of degree requirements, and the student is allowed to complete the degree requirements in effect when he or she was originally admitted.

Once a leave is approved, it is the student's responsibility to withdraw from any classes for which the student has already enrolled. An approved leave may not exceed one academic year. A student whose leave exceeds one academic year or who fails to maintain continuous enrollment without obtaining an approved leave must, when ready to return to school, apply for readmission to the program. Applications for readmission are available by email, fax or hard copy. Contact the program adviser for the applicable program.

Students who must completely withdraw from a program must notify their program office of their withdrawal from the program. Students should contact their program office for more information or assistance.

Course Work at Another Institution

Once matriculated into a Marshall School of Business program, a student must receive prior permission by petition from the appropriate Marshall program office to take course work (a maximum of six units) at another institution. Only course work from an AACSB accredited business school can be accepted. A grade of B or better

must be earned. Permission is granted only in exceptional circumstances.

Limited Status

The Marshall School of Business does not allow students to take graduate (500-level) electives on any conditional or special status basis prior to application and an official admission decision except under the following condition: students completing a Master of Business Administration program at another accredited university outside of the Los Angeles area may take up to 12 units in the Marshall School of Business to complete their degrees, provided that a letter from the associate dean or program director at a student's university identifies the classes that will be accepted for credit by the university granting the degree.

Doctor of Philosophy

The Doctor of Philosophy program in business administration is designed to produce research-oriented graduates who, from positions in academia, can advance the state-of-the-art of business practice and enhance the contributions that business can make to the larger community. These goals can be advanced through research contributions in theory, concepts, methods and practices, and contributions to the education of the next generation of business leaders. USC Marshall offers the Ph.D. in Business Administration in the following five departments: Accounting, Finance and Business Economics, Information and Operations Management, Management and Organization, and Marketing.

All students admitted to the Marshall Ph.D. degree program are supported by graduate assistantships or fellowships that require a full-time commitment to the program. No part-time or evening programs are available. Ph.D. students begin their program in early August and are expected to be in residence 12 months each year throughout the program. Until the time the student is granted permission to take the qualifying examination, successful completion of at least six units per consecutive semester is required.

This degree is awarded under the jurisdiction of the Graduate School. Students should also refer to the Graduate School section of this catalogue. All courses applied toward the degree must be accepted by the Graduate School and relevant to the student's program of study. In most cases, the Ph.D. degree takes five years to complete.

Admission

The Ph.D. program in Business Administration welcomes applications from students with high intellectual aptitude who plan to pursue academic careers in research and teaching. Students with strong backgrounds in mathematics, psychology, the social sciences, engineering, computer science and the other sciences are encouraged to apply for admission. A master's degree or MBA is not a requirement for entry into the Ph.D. program; students may enter with only a bachelor's degree. Prior academic research experience is desirable.

Grade Point Average Requirements

Master's students must maintain a grade point average of 3.0 (A = 4.0) or better to stay in good academic standing. Students who are not in good academic standing are subject to dismissal.

Grades

Grades below C (2.0) in all master's degree courses are not acceptable. If a lower grade is earned in a required course, the course must be repeated at USC and a grade of C or above must be earned. Degree credit will not be given for courses with grades of C- and below, but the grades are computed into the grade point average. Such courses should be repeated in the next semester in which the course in question is offered and must be repeated within one calendar year. Satisfactory completion of all required courses must occur prior to or concurrently with the beginning of advanced course work.

Students who wish to apply for admission to the Ph.D. program should visit marshall.usc.edu/phd to obtain additional information about the Ph.D. program and an online application. Only online applications are accepted. Students with additional questions that are not covered on the Website may contact the Marshall School Ph.D. Program office located in Accounting Building 214, (213) 740-0676 or phd@marshall.usc.edu.

Applicants should secure three letters of recommendation. The Ph.D. committee prefers that all recommendations be written by academics who are familiar with the applicant's scholastic and research capabilities. An applicant who has been away from an academic environment for a significant period of time may substitute one academic reference with a non-academic reference. Applicants also provide transcripts, GRE or GMAT scores, TOEFL or IELTS scores (if appropriate) and a statement of purpose. Applicants are encouraged to send a statement of research experience and a research writing sample, if available.

Consideration is given to the rigor of the undergraduate and master's curricula, academic performance, scores on the GRE or GMAT, the quality of the statement of purpose, fit with the department, the applicant's oral and written communication skills and letters of recommendation.

Campus interviews for top applicants may be initiated by the departments. In cases where in-person interviews cannot be arranged, alternative arrangements will be made.

Graduate Assistantships

All admitted students receive a fellowship or graduate assistantship, full tuition, health and dental insurance and payment of mandatory student health center fee for a minimum of four years dependent on continued satisfactory academic progress. This progress is assessed by the Ph.D. program based on students maintaining at least the minimum enrollment, a GPA of at least 3.0, and satisfactory performance in graduate assistant assignments. At the end of the fourth year, students may apply for an assistantship for the fifth year of study. Students who receive assistantships serve as teaching assistants

Academic Warning

Master's students who, in a term, do not earn or maintain a 3.0 (A = 4.0) grade point average will be given an academic warning in the semester following the one in which they became deficient in grade points. Students who fail to achieve a 3.0 upon completion of the required number of units for any degree may, with the prior permission of the assistant dean or the vice dean of graduate programs, be allowed to take a maximum of 12 additional units at USC to obtain the required GPA. Petitions to take additional units should be submitted to the student's program office.

Dismissal

A student may be dismissed from a master's program whenever, in the judgment of the program's assistant dean and the vice dean for graduate programs, it is unlikely that the student will successfully complete his or her program.

or research apprentices each semester of the award. Teaching and teaching assistant assignments are made only after a student has passed the qualifying examination. For research apprentice assignments, students are engaged with a faculty member in a business-related, applied-learning, scholarly activity to learn the skills necessary to conduct independent research.

Degree Requirements

The Doctor of Philosophy in business administration is based on a program of study and research culminating in the completion of a dissertation in the major field of study. A minimum of 60 units of course work beyond the baccalaureate is required for the Ph.D. degree, including research courses and a minimum of 4 units and a maximum of 8 units of GSBA 794 Doctoral Dissertation. For students who already possess a master's degree, a minimum of 40 semester units of course work beyond that degree is required, of which a maximum of 4 units may be GSBA 794 Doctoral Dissertation. Doctoral students are subject to disqualification at any time that the Marshall School of Business determines that they are deficient in academic achievement. All students must maintain a 3.0 GPA.

Screening Procedure

In addition to the papers and examinations assigned in first-year courses, a screening process will occur in May. This process will include a review of each student's grades, an analysis of competence in written communications and reports from faculty members who have had in-class or other responsibility for the student. In most departments, a screening exam is required. The nature of the exam varies by department. Generally, a screening examination or other procedure designated by the department (Accounting, Finance and Business Economics, Information and Operations Management, Management and Organization, and Marketing) is to be administered before the student has taken more than 24 units (including research courses). However, the Accounting and Finance and Business Economics departments require their students to take the departmental course requirements until the end of the second year;

students must take up to 36 units before the departmental screening procedure is administered. Based upon this review, the Ph.D. committee will determine whether the student should continue in the Ph.D. program. Students who have not performed satisfactorily will be dropped from the program. The review shall normally be completed and results communicated to students by July 1. In some cases a first-year summer project may be taken into account in determining whether a student should continue in the program.

Qualifying Exam Committee and Dissertation Committee

Students are responsible for finding a qualifying exam committee chair among the student's home department faculty by the fall semester of the second year. The qualifying exam committee should be established within the student's home department at least two semesters prior to taking the qualifying examination and after the student has passed the screening procedure. The qualifying exam committee comprises a minimum of five tenured, tenure-track and non-tenure track USC faculty, three of whom must be from the student's home department. At least one faculty member from the home department must be tenured. One member must be from outside the student's home department. The qualifying exam committee advises the student on courses during the first two years and oversees and grades the qualifying examination.

Within 90 days of passing the qualifying exam, the dissertation committee chair must be identified. The dissertation committee must be appointed within six months after the qualifying examination has been passed and a dissertation topic approved. The committee should be appointed at least one month before the dissertation defense. The appointment of dissertation committee form, available on the Graduate School Website, is used to establish the dissertation committee. The dissertation committee is normally composed of three members, although additional members may be included at the student's and committee chair's discretion. The committee chair and at least one additional member must be affiliated with the student's home department. Faculty eligible to serve as committee members include tenured and tenure-track faculty, and non-tenure track faculty of outstanding stature who have a documented record of exceptional expertise and superior achievement in a field relevant to the dissertation. At least two members of the committee should be tenured or tenure-track, including the committee chair.

The Marshall School of Business Ph.D. program requires an outside member for both the qualifying exam committee and dissertation committee. The outside member may be a faculty member from another department within Marshall or from another school within USC. Students may also include a person from a different university as an additional member with the permission of the chair; however, this person cannot substitute for the required outside member.

Course Requirements

Each student must successfully complete one course in microeconomics or behavioral sciences, one course in statistics and one course in research design plus the core courses in his or her field of specialization. Advanced course work is specified by the student's guidance committee in preparation for the qualifying examinations in the area of specialization. The areas are: accounting, information and operations management, finance and business economics, management and organization, and marketing.

Qualifying Examination

The examination qualifying a student for candidacy may be comprehensive in nature. It is designed to determine the student's competence in the area of specialization.

The qualifying examination consists of two sections: written and oral. The written section must be passed before the oral section; if a student does not pass the written examination, the oral examination need not be administered.

In preparing for the qualifying examination, students form a qualifying exam committee. This committee helps the student prepare for the exam and also administers the written and oral section of the examination. See also the Graduate School section of this catalogue, page xx.

Dissertation

The final phase of the program is the completion of a dissertation. The dissertation must be based on an original investigation that makes a substantive contribution to knowledge and demonstrates the student's capacity for independent, scholarly research. The quality of the dissertation should meet the standards for publication in leading academic journals in the field.

Typically, research in business administration involves studies that advance the body of knowledge concerned with issues and solution of problems confronting managers and administrators. As a result, a dissertation

will (1) develop or extend theories, techniques or models relevant to managerial problems; (2) demonstrate original applications or adaptations of existing theories, techniques or models to managerial problems in a specific area; (3) develop innovative formulations and analyses of complex managerial problems and propose creative approaches to their solution; and/or (4) employ scientific research methodology to test empirically the validity of existing theories, techniques or models and their application to specific types of managerial problems.

A dissertation committee chair shall be requested by the student and appointed by the dean of the Ph.D. program within 90 days after the student has passed the qualifying examination. The remaining faculty on the dissertation committee shall be appointed within six months after the student has passed the qualifying exam.

The dissertation committee must consist of at least three tenured or tenure-track faculty, two of whom must be from the student's home department. At least one faculty member from the home department must be tenured.

One member must be from outside the student's department and the Marshall School of Business. Students may add additional faculty to the committee, especially those who might provide valuable expertise that improves the dissertation. It is important that the student select faculty members who are committed and interested in serving on the committee, since a quality dissertation requires extensive interaction with and a sizable time commitment from individual faculty members.

Defense of the Dissertation

When the dissertation committee agrees that the candidate has essentially completed the research and a satisfactory draft of the dissertation has been written, a final oral examination is held. This examination is open to all members of the faculty of the school and the university. Final judgment of the dissertation and the oral defense is rendered by the members of the dissertation committee. The dissertation must be accepted unanimously by the dissertation committee. Further information on procedures is contained in the Graduate School section of this catalogue, page xx.

Special Programs

Office of Executive Education

The Office of Executive Education offers executive education and certificate programs that are not part of the regular degree programs. The Office of Executive Education is located in the Davidson Conference Center 107, (213) 740-8990; Fax (213) 749-3689 or email: karla.wiseman@marshall.usc.edu.

Center for International Business Education and Research (CIBER)

The Marshall School's Center for International Business Education and Research (CIBER) won a national competition in October 1990 to become one of the U.S. Department of Education's 10 national centers for international business. The center's mandate is to broaden and deepen knowledge about international business among USC students, faculty and business stakeholders to increase their international competitiveness. Between 1990 and 2010, the U.S. Department of Education

provided USC CIBER with \$7.4 million of support, which has been more than matched by USC cash and in-kind contributions to support over 130 projects that have helped to internationalize teaching and research programs throughout the Marshall School of Business and USC. In 2010 CIBER won its seventh consecutive four-year renewal worth \$1.6 million. CIBER Director Richard Drobnick and Suzette Furbeyre coordinate and direct the projects, which are led by USC faculty. Phone (213) 740-7130; Fax (213) 740-8538 or email: ciber@usc.edu.

Courses of Instruction

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

MAJOR RESTRICTIONS

Enrollment in most 500-level business courses by non-business graduate students requires special permission. For information about the registration application process for non-business students, visit the *Schedule of Classes*.

ACCOUNTING

Accounting courses are listed in the USC Leventhal School of Accounting section of this catalogue.

BUSINESS ADMINISTRATION (BUAD)

BUAD 020x Survey of Business Administration (3, FaSp) Survey of the important topics in business administration, including marketing, accounting, finance, management information systems, leadership, business communication, and human resource management. Not available for degree credit. *Recommended preparation:* 2–5 years management experience.

BUAD 040 Executive Development (4) Problems and cases in contemporary management and business economics in American society. Graded credit/no credit. Open only to participants in managerial institutes and executive programs sponsored by the Marshall School of Business. Open to USC employees.

BUAD 100x Foundations of Finance and Accounting (2) Accounting information in decision-making from the perspective of users and preparers. Basics of financial asset valuation. Consideration of time-value of money and risk. Graded CR/NC. Not available for major or minor credit.

BUAD 101 Freshman Leadership Seminar (2, FaSpSm) Colloquium of leading researchers, authors, and administrators in the Marshall School of Business and other schools at USC. Industry leaders will also be invited to talk about leadership challenges. Graded CR/NC. Open only to business and accounting majors.

BUAD 102 Global Leadership Seminar (2, FaSpSm) Colloquium of researchers and industry leaders discussing international business and the challenges faced by leaders in a global environment, with a specific focus on China. Graded CR/NC. Open to exceptional freshman business and accounting students only. International travel may require additional fees.

BUAD 104 Learning About International Commerce (2, FaSpSm) Provides insight into the opportunities and challenges faced by business professionals operating in a global environment by focusing on international cultural norms. Graded CR/NC. Open only to business and accounting majors.

BUAD 200x Economic Foundations for Business (2, FaSp) Examines fundamental concepts of both microeconomics and macroeconomics as they pertain to business and financial decisions. Not available for degree credit to business majors.

BUAD 201x Introduction to Business for Non-Majors (4) Introduction to the principles and practices of businesses, sequence of exercises developing the basic skills, and influence of the economy on business and individual decisions. Not available for credit for business or accounting majors.

BUAD 204 Global Business from a Local Perspective (2, Sp) Concepts, frameworks and cultural insights into global business. Includes readings, group projects and visits with Los Angeles area companies that have an international presence. Graded CR/NC. (Duplicates credit in BUAD 102 and BUAD 104.) Open only to business and accounting majors. Not open to freshmen.

BUAD 215x Foundations of Business Finance (4, FaSpSm) Principles and practices of modern financial management; use of financial statements; valuation of investment; asset pricing under uncertainty; elements of financial decisions. Not available for degree credit to business or accounting majors. (Duplicates credit in BUAD 306.) *Prerequisite:* ACCT 410x or BUAD 280 or BUAD 285a or BUAD 305.

BUAD 252 Choosing and Planning a Future Career in Business (2, FaSpSm) Explore and plan for future career choices and options in business. Learn theoretical principles, best practices and strategies, and contemporary workplace issues/trends. Graded CR/NC. Open only to sophomores, juniors and seniors.

BUAD 280 Accounting I (4, FaSpSm) Accounting information useful for decision-makers surrounding issues concerning income, expense and cash flows; economic resource, debt and equity capital decisions by managers. (Duplicates credit in BUAD 250ab and BUAD 305.)

BUAD 281 Accounting II (2, FaSpSm) Continuation of Accounting I, enhancing management decision-making with strategic product costing, profit planning and standard costs analysis; using data to facilitate any organization's success. (Duplicates credit in BUAD 250ab and BUAD 305.) *Prerequisite:* BUAD 280.

BUAD 285ab Accounting Fundamentals, Financial and Managerial Accounting (4-2, FaSpSm) *a:* Development and use of accounting information important to investors and professionals with a focus on the analysis of business operations, financial position, and cash flows. (Duplicates credit in former BUAD 250ab, and BUAD 280, BUAD 286b and BUAD 305.) *b:* Continuation of BUAD 285a: accounting information useful for the analysis of product costing, budgeting and organizational performance. (Duplicates credit in former BUAD 250b, and BUAD 281, BUAD 286a and BUAD 305.) *Corequisite:* BUAD 285a.

BUAD 286ab Accounting Fundamentals, Managerial and Financial Accounting (4-2, FaSpSm) *a:* Development and use of accounting information important to executives, managers, and other decision-makers, with a focus on the analysis of business operations and organizational performance. (Duplicates credit in former BUAD 250b, BUAD 281, BUAD 285b and BUAD 305.) *b:* Continuation of BUAD 286a: accounting information useful for the analysis of the income statement, balance sheet and cash flow statement. (Duplicates credit in former BUAD 250a, and BUAD 280, BUAD 285a and BUAD 305.) *Corequisite:* BUAD 286a.

BUAD 301 Technical Entrepreneurship (3) Starting and managing a technological business: developing a viable concept, market and financial planning, product development, organizing the venture, protecting intellectual property rights.

BUAD 302 Communication Strategy in Business (4, FaSpSm) Theory, practices, and techniques of business communication strategy essential to external and organizational communication; group and interpersonal communication; development of skill in oral and written communication.

BUAD 302T Business Communication for Accountants (4, FaSp) Theory, practices, and techniques essential to communication by accounting professionals; interpersonal communication, written and oral presentations; communication technologies; development of communication strategies for varied audiences. Open to accounting majors only. (Duplicates credit in BUAD 302.) *Recommended preparation:* WRIT 340.

BUAD 304 Leading Organizations (4, FaSp) The role of leadership in business organizations; concepts and skills for managing oneself and others.

BUAD 305 Abridged Core Concepts of Accounting Information (4, FaSp) Uses of accounting information in decision-making; accounting issues concerning income and cash flows, economic resources and capital. (Duplicates credit in BUAD 250ab, BUAD 280, BUAD 281.)

BUAD 306 Business Finance (4, FaSpSm) Financial problems of business enterprise; function of financial manager; sources of funds; instruments, institutions, and practices of finance; problems of financial management using case studies. (Duplicates credit in BUAD 215x.) *Prerequisite:* ACCT 410 or BUAD 280 or BUAD 285a or BUAD 286b or BUAD 305 and ECON 351x.

BUAD 307 Marketing Fundamentals (4, FaSpSm) Develops a managerial viewpoint in planning and evaluating marketing decisions of the firm: products, pricing, channels, promotion, information processing, legal implications, and marketing in contemporary society.

BUAD 310 Applied Business Statistics (4, FaSpSm) Statistical methods for business analysis; data exploration and description; sampling distributions; estimation; hypothesis testing, simple and multiple regression; model building. Extensive computer applications.

BUAD 311 Operations Management (4, FaSpSm) Fundamentals of operations management. Skills needed to analyze, manage, and improve business processes. Topics include: process, capacity, service, and inventory management and optimization. (Duplicates credit in BUAD 311T.) *Corequisite:* BUAD 310.

BUAD 311T Operations Management for Accounting Majors (4) Learn the fundamentals of operations management and acquire skills to analyze, measure, control and improve production processes. Open to accounting majors only. (Duplicates credit in BUAD 311.)

BUAD 315x Basics of Project and Operations Management for Non-Majors (2, FaSpSm) Introduction to tools and methods for the design, production, and delivery of goods and services. Techniques for planning, monitoring, and controlling complex projects. Not for major credit for, and not open to, accounting and business administration majors. (Duplicates credit in BUAD 311 and BUAD 311T.)

BUAD 350 Macroeconomic Analysis for Business Decisions (4, FaSpSm) Behavior of economic indicators over business fluctuations, economic growth, monetary and fiscal policy, exchange rate movements. *Prerequisite:* ECON 203, ECON 205.

BUAD 351 Economic Analysis for Business Decisions (4, FaSpSm) Theory of the firm in the enterprise system; profits, demand, and cost analysis; market competition and resource allocation; problems of size efficiency and growth. *Prerequisite:* ECON 203, ECON 205 and either MATH 118 or MATH 125.

BUAD 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

BUAD 425 Data Analysis for Decision Making (2, FaSpSm) Leveraging large corporate datasets; slice and dice data; dash boards; data mining and statistical tools; neural network; multiple and logistic regression; decision tree; gain inference and decision making; clustering. *Prerequisite:* BUAD 310 and BUAD 311 or BUAD 311T; *Corequisite:* BUAD 497.

BUAD 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings under the supervision of a faculty adviser. Application and proposal required. Not available for graduate credit.

BUAD 491 Honors Seminar (2, max 4, FaSp) Advanced study of a selected topic in business administration. In-depth exploration of relevant theories and methods of analysis. Senior standing with a minimum overall GPA of 3.3 and completion of at least 32 units of upper division BUAD courses with a minimum GPA of 3.5 required.

BUAD 493 Marshall Honors Research Seminar (4, Sp) Provides the methodological tools to identify research problems, develop researchable hypotheses, apply appropriate methodologies, conduct research, derive meaningful conclusions from data, write a research proposal. Open only to business and accounting majors.

BUAD 494 Marshall Honors Research and Thesis (2-4, max 4, FaSpSm) Experience in conducting research and writing a thesis under the supervision of a faculty adviser. Open only to students in the Marshall Honors program. (Duplicates credit in ACCT 494.) Graded CR/NC. *Prerequisite:* ACCT 493 or BUAD 493.

BUAD 495 Practicum in Business Issues (Internship) (1, max 12) Combined classroom discussion and structured, supervised field application of business theories and practices within a part-time employment context. Open only to undergraduate students. Graded CR/NC.

BUAD 497 Strategic Management (4, FaSpSm) Examination of managerial decision-making, planning, and policy under changing environments; readings, cases, exercises, simulations. *Prerequisite:* BUAD 281 or BUAD 285b or BUAD 286b or BUAD 305 and BUAD 304 and BUAD 307 and BUAD 215x or BUAD 306 and BUAD 302 or BUAD 302T; *corequisite:* BUAD 311 or BUAD 311T.

BUAD 498 Business Field Project (Undergraduate) (1 or 2, max 3, FaSpSm) Unpaid individual or team projects solving real business problems for client companies; situation analyses; statistical analysis; consulting practicum; oral and written presentations. Open to sophomores, juniors and seniors only. Graded CR/NC.

BUAD 499 Special Topics (2-4, max 8, Irregular) Examination of current literature relevant to the total and changing environment in which business operates.

BUSINESS ENTREPRENEURSHIP (BAEP)

BAEP 423 Management of Small Businesses (4, FaSp) Strategic, organizational and human issues facing the small business; influence of the founder's personality, managing growth, competitive strengths and weaknesses are covered.

BAEP 450x Fundamentals of Entrepreneurship (4, FaSp) Starting and managing one's own business: developing a viable concept, organizing the enterprise, market and financial planning, and controlling the organization. Not available for credit to Entrepreneur Program majors, undergraduate or graduate.

BAEP 451 The Management of New Enterprises (4, FaSp) Development of analytical and conceptual skills in entrepreneurship and venture management.

BAEP 452 Feasibility Analysis (4, FaSpSm) Students develop (including marketing, operating and financial consequences) analyze and validate entrepreneurial concepts using customer feedback and risk assessment to conclude worthiness to pursue. *Prerequisite:* one from BAEP 450 or BAEP 451 or BUAD 301.

BAEP 453 Venture Management (4, Sp) Design and application of organization structures and systems in management of new ventures. *Prerequisite:* BAEP 451.

BAEP 454 The Entrepreneurial Business Plan (4, Sp) Development of a detailed plan for starting and owning an enterprise. *Prerequisite:* BAEP 452.

BAEP 460 Seminar in Entrepreneurship (2, FaSpSm) The intimate issues of entrepreneurship. Internalization of the key decisions that an individual needs for creating and building the entrepreneurial organization.

BAEP 470 The Entrepreneurial Mindset — Taking the Leap (2, FaSp) A deeper insight into the entrepreneurial mind, how it approaches opportunities and challenges and gives leadership to an organization.

BAEP 480 Entrepreneurial Family Business (4, FaSpSm) Explores the dynamics of family and privately held businesses. Exploring generational and extended family issues, opportunities and obstacles faced in today's environment. Not open to freshmen.

BAEP 491 Introduction to Social Entrepreneurship (4, FaSpSm) Analysis of social enterprise models from micro-finance to job development. Analysis of basic issues regarding the difference between socially responsible companies, for-profit, and non-profit-run enterprises.

BAEP 495 Practicum in Business Issues (Internship) (1, FaSpSm) Combined classroom discussion and field application of business theories and practices; part-time internship employment. Project to be jointly defined by student, employer and professor. Graded CR/NC.

BAEP 496 The Digital Startup Launchpad (2, FaSpSm) Real-life challenge of imagining, prototyping, testing and iterating, building, pricing, marketing, distributing and selling a digital product or service. *Prerequisite:* BAEP 451 and BAEP 452 and ITP 466 and ITP 476; *corequisite:* ITP 496.

BAEP 497 Field Project in Entrepreneurship (2, max 4, FaSpSm) Individual or team projects solving real problems for an enterprise. Situation analyses; research proposal composition; field research techniques; statistical analysis; oral and written presentations. Open only to juniors and seniors. Graded CR/NC.

BAEP 499 Special Topics (2-4, max 8, Irregular) Current developments in the field of entrepreneurship: topics to be selected each semester.

BAEP 549 Initiating New Ventures (2-3, FaSpSm) Moving beyond the business plan; identifying individual and organizational leadership skills needed to move a venture forward; "how-to" portion of establishing an enterprise.

BAEP 551 Introduction to New Ventures (3, FaSp) Study and development of analytical and conceptual skills in the management of new enterprises and new ventures within large organizations. (Duplicates credit in former BAEP 550x and GSBA 586.)

BAEP 552 Cases in Feasibility Analysis (3, FaSpSm)

Study of analytical techniques used to evaluate business concepts and new business development. *Corequisite:* BAEP 551 or GSBA 586.

BAEP 553 Cases in New Venture Management (3, FaSp)

Cases and readings expose students to the challenges of developing long-range strategies for entrepreneurial ventures. Emphasis is on developing new industries, growth through strategic alliances, and issues involved in the long-range strategic positioning of emerging companies.

BAEP 554 The New Venture Business Plan (3, Sp)

Creation of an operating plan for starting or managing fast-growing ventures. *Prerequisite:* BAEP 552 or BAEP 556.

BAEP 555 Management of Rapidly Growing Ventures (3, Sp)

Exploration and analysis of the operational and financial issues entrepreneurs confront when managing a rapidly growing venture.

BAEP 556 Technology Feasibility (3, Fa)

Gives students the critical thinking and analytical skills they need to evaluate, value and manage technology as intellectual property. Students will learn the technology commercialization process, use data mining and assessment techniques for patent databases, and study the unique business issues facing high technology start-ups.

BAEP 557 Technology Commercialization (3, Sp)

Focus of the course is on the identification, evaluation and commercialization of new technologies. Emphasis will be placed on the legal, financial and marketing aspects of technology transfer and development.

BAEP 558 The Entrepreneurial Advisor (3, Irregular)

Site visits to five middle market firms and meeting their CEOs. Papers based on the problem or opportunity posed by the entrepreneur will be required.

BAEP 559 Investing in New Ventures (3, Fa)

Focus on the entrepreneurial skill set applied to new venture opportunities. Taught from the business plan reader's point of view; focus on selecting opportunities, structuring the relationship, adding value and realizing the value of that investment.

BAEP 560 Acquiring Your Own Business or Opportunity (3, Sp)

Issues faced by the entrepreneur who wishes to acquire an enterprise; appropriateness of an enterprise, understanding funding sources and valuation methods, developing a plan for due diligence, negotiating and consummating the transaction. The acquisition process, approaches to valuation, and the roles of the various parties in negotiating and consummating an acquisition of an existing business.

BAEP 561 Entrepreneurship in Innovative Industries: Life Sciences (1.5)

The challenges of new venture creation in the biotechnology, medical device, and healthcare areas; experience, evaluate, and analyze profits of current impact in the life sciences.

BAEP 590 Directed Research (1-12, FaSpSm)

Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

BAEP 591 Social Entrepreneurship (3, Sp)

Lead and manage with entrepreneurial methodology for charities, non-government organizations, social oriented enterprises and not for profit organizations.

BAEP 592 Field Research in Business Entrepreneurship (.5-4, max 12, FaSpSm)

Individual or team projects studying the business practices of an entrepreneurial industry, company, government agency, country, etc. Proposal, data collection, analyses, and written report. Open only to master's and doctoral students. Graded CR/NC. *Recommended preparation:* Completion of required MBA, M.Acc. or MBT course work.

BAEP 593 Independent Research in Business Entrepreneurship (.5-4, max 12, FaSpSm)

Independent research beyond normal course offerings. Proposal, research and written report/paper required. Open only to master's students. Graded CR/NC.

BAEP 595 Internship in Business Entrepreneurship (.5-2, max 9, FaSpSm)

Supervised on-the-job business experience in the student's area of interest. (Curricular Practical Training.) Open only to graduate business and accounting majors. Graded CR/NC. *Recommended preparation:* Completion of required MBA, M.Acc., or MBT course work.

BAEP 596 Research Practicum in Business Entrepreneurship (.5-2, max 8, FaSpSm)

Hands-on practical experience working with a faculty member in the Lloyd Greif Center for Entrepreneurial Studies on an ongoing research project. Open only to master's and doctoral students. Graded CR/NC.

BAEP 597 Consulting Project in Business Entrepreneurship (.5-5, max 12, FaSpSm)

Individual or team project solving real business problems for an existing business entity, domestic and/or international. Proposal, field research, analyses and oral and written presentations. Open only to master's and doctoral students. Graded CR/NC.

BAEP 599 Special Topics (1.5-3, max 9, Irregular)

Current developments in the field of entrepreneurship: topics to be selected each semester.

BUSINESS COMMUNICATION (BUCO)**BUCO 221 Cross-Cultural Business Communication for Non-Native Speakers (2, FaSpSm)**

Written, spoken and cultural business communication skills for non-native speakers of English. Emphasis on individualized skills development according to need. Graded CR/NC.

BUCO 252 The Art of Case Analysis and Presentation (2, FaSp)

Develop analytical problem-solving and persuasive presentation skills to successfully analyze strategic business situations and convincingly argue your position in a competitive environment. (Duplicates credit in former BUCO 452.) Graded CR/NC. *Prerequisite:* BUAD 304.

BUCO 260 Business Communication Across Cultures (2, FaSp)

Develop intercultural communication competencies, analyze international business situations, build on/or prepare for GLP and LINC trips, internships abroad, and international exchange programs.

BUCO 333m Communication in the Working World — Managing Diversity and Conflict (4, FaSp)

Communication strategies to manage workplace diversity and conflict. Historical, social, legal precedents. Institutional barriers to diversity. Race, gender, sexual orientation, age, physical disabilities, culture.

BUCO 425 Ethics and Professional Communication (4, FaSp)

Study the intersection between business and professional leadership, language, and ethics. Analyze and present results to public audiences through publications, professional conferences, ethics case competitions.

BUCO 445 Building Oral Communication Expertise (4, Fa)

Oral reporting; management briefings; building expertise in persuasive business presentations, both in-person and via new media channels; emotional intelligence; personal branding. *Recommended preparation:* BUAD 302.

BUCO 450 Communication for Organizations: Exploring Creativity (2, FaSp)

Development of individual creative thinking and problem-solving skills; exploration of workplace creativity; advancement of managerial communication skills necessary to foster organizational innovation.

BUCO 458 Managing Communication and New Media (4, FaSp)

Individual and team exploration of 21st century media tools and their impact on communication strategies in business. Course uses social media, collaborative software, virtual immersion, and video conferencing.

BUCO 460 International Business Communication (4, FaSp)

Explore the cultural dynamics and organizational communication models that contribute to successful business practices in multinational corporations and other global settings. *Recommended preparation:* BUAD 302.

BUCO 485 Business Communication Management for Nonprofits (4)

Communication environment; communication activities for fundraising and visibility; research and evaluation methods; grant proposals; strategies for communicating social mission to media, government and for-profit partners.

BUCO 499 Special Topics (2-4, max 12, FaSpSm)

Current developments in the field of business communication. Topics vary from semester to semester.

BUCO 503 Advanced Managerial Communication (3, FaSp) Advanced skill development in the application of business communication theory to presentations and visual and verbal persuasion. Executive coaching model applied to interpersonal communication dynamics. (Open only to Accounting and Business graduate students, including dual degrees.) *Recommended preparation:* Prior course work or experience in management or business communication.

BUCO 533 Managing Communication in Organizations (3, FaSp) Analyze, design, develop, and present theory-based communication solutions and strategies to sophisticated interpersonal, group, organizational, and environmental communication issues and problems. *Recommended preparation:* GSBA 502 or GSBA 523 or GSBA 542.

BUCO 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

BUCO 592 Field Research in in Management Communication (.5-4, max 12, FaSpSm) Individual or team projects studying the communication practices of an industry, company, government agency, country, geographic region, etc. Proposal, data collection, analyses, and written report. Open only to master's and doctoral students. Graded CR/NC. *Recommended preparation:* completion of required MBA course work.

BUCO 593 Independent Research in Management Communication (.5-4, max 12, FaSpSm) Independent research beyond normal course offerings. Proposal, research and written report/paper required. Open only to master's students. Graded CR/NC.

BUCO 595 Internship in Management Communication (.5-2, max 9, FaSpSm) Supervised on-the-job business experience in the field of management communication. (Curricular Practical Training.) Open only to graduate business and accounting majors. *Recommended preparation:* completion of required MBA, M.Acc., or MBT course work.

BUCO 596 Research Practicum in Management Communication (.5-2, max 8, FaSpSm) Hands-on practical experience working with a Management Communication faculty member on an ongoing research project. Open only to master's and doctoral students. Graded CR/NC.

BUCO 597 Consulting Project in Management Communication (.5-5, max 12, FaSpSm) Individual or team project solving real business problems for an existing business entity, domestic and/or international. Proposal, field research, analyses and oral and written presentations. Open only to master's and doctoral students. Graded CR/NC.

BUCO 633 Writing a Journal Article for Publication (2, max 4, FaSp) Developing strategies for productive academic writing; drafting and revising an article for journal submission. Open only to doctoral students.

BUCO 634 Presenting Your Research (1, FaSpSm) Oral presentation skills for academic and professional conferences and teaching. Open only to doctoral students.

BUCO 635 Preparing for the Academic Job Market (1, FaSpSm) Creating job application packets; writing research and teaching philosophy statements; interviewing; preparing the job talk. Open only to doctoral students.

BUCO 636 Communication for Doctoral Students: Tutorial (1, max 4) Individualized tutorial focusing on academic writing and presentation skills for dissertations, conference papers, and journal articles. Graded CR/NC. Open only to GSBA doctoral students. *Prerequisite:* BUCO 633 or BUCO 634 or BUCO 635.

BUCO 637 Communication for Doctoral Students: Succeeding as a Teacher (1, Sm) Theories of teaching and learning; strategies for developing course materials; practical advice for managing common challenges; lecturing, leading discussion, creating in-class activities. Graded CR/NC.

FINANCE AND BUSINESS ECONOMICS (FBE)

FBE 324 The Financial System (4) Financial intermediaries in the flow of funds; aggregate financial asset analysis; money markets and interest rates; government debt and its economic effects. Open only to sophomores, juniors and seniors. *Prerequisite:* BUAD 350 or BUAD 351; or ECON 203 and ECON 205; or ECON 351x and ECON 352x.

FBE 391 Real Estate Finance and Investment (4, FaSp) Introduction to income-producing real estate from the perspective of finance, market analysis, capital markets, development and investment. Includes focus on analytical techniques and computer applications. (Duplicates credit in former FBE 365.) *Prerequisite:* BUAD 215x or BUAD 306.

FBE 400x Introduction to Real Estate Finance and Development (4, Fa) Case analysis examining economic and financial aspects of real estate decisions for non-business majors. Focuses on dynamics of financing, markets and the development process. Open to all majors. Not available for credit as a senior options course for business majors or for students in the real estate option. (Duplicates credit in former FBE 200x.)

FBE 402 Government and Business (4) American mixed capitalism, welfare, market failure, and the role of government in business; regulation and the public utilities, antitrust policy, and current topics in regulation-deregulation.

FBE 403 Introduction to the Legal Environment of Business (4, FaSp) Legal principles of business: litigation process, constitutional law, torts, product liability, crimes, contracts, sales and leases, intellectual property, international law, agency, employment law, and ethics. (Duplicates credit in the former BUAD 403.) Not open to freshmen.

FBE 416 Managerial Economics (4) Application of microeconomic theory to problems of the firm, quantification of demand and cost relationships; pricing policies. *Prerequisite:* BUAD 311; and BUAD 351 or ECON 203 or ECON 351x.

FBE 421 Financial Analysis and Valuation (4, FaSp) This course develops and uses tools of financial analysis to evaluate the performance and assess the value of individual companies in an industry context. *Prerequisite:* BUAD 215x or BUAD 306.

FBE 423 Introduction to Venture Capital and Private Equity (4, FaSp) Introduction to venture capital and private equity. Topics include fundraising, valuation of new firms and venture capital securities, and exiting investments through public offerings. *Prerequisite:* BUAD 215x or BUAD 306.

FBE 425 Management of Financial Institutions (4) Management problems of banks, savings and loans, and insurance companies; pricing of services; branching; lending criteria; asset and liability management.

FBE 427 Real Estate Law (4, FaSp) Principles of law regarding real property transactions; buyer-seller, debtor-creditor, landlord-tenant relationships; environmental law and land use control; investments and syndication.

FBE 428 Principles of Employment Law (4, FaSpSm) Survey of current employment law topics including employment discrimination arising within modern workplaces. Legal and business strategies for managing diversity for organizational success.

FBE 429 International Business Law (4, FaSp) Introductory course on the legal and regulatory environment of international business transactions.

FBE 430 Online Commerce and Intellectual Property (4, Sp) Introductory course on the legal and regulatory environment of online commerce, intellectual property, patents, copyright, trademarks, domain names, entertainment, multimedia, digital and Internet law.

FBE 431 Financial Policies and Corporate Governance (4, FaSp) Presentation of the theory and institutional details of corporate finance, with emphasis on debt and dividend policies, governance/voting rights, and security issuance and retirement. *Prerequisite:* BUAD 215x or BUAD 306.

FBE 432 Corporate Financial Strategy (4, FaSp) Linkage between financial theory and policy and corporate strategy, the role of financial managers in developing corporate strategy; applications of concepts and techniques using cases. *Prerequisite:* BUAD 215x or BUAD 306.

FBE 433 Corporate Governance and CEO Pay (4, Sp) Explores how value is created (or destroyed) through incentive compensation and corporate governance. Focus on bonuses, stock options, executive compensation, and financing policies. *Prerequisite:* BUAD 215x or BUAD 306.

FBE 435 Applied Finance in Fixed Income Securities (4, Sp) Emphasis on hedging tools necessary for portfolio managers. Introduction of all securities available in fixed income and provision of tools to analyze investments. *Prerequisite:* BUAD 215x or BUAD 306.

FBE 436 Financial Management of Multinational Corporations (4) International scope and dimension of financial planning; working capital management; financing and investment decisions of multinational corporations. *Prerequisite:* BUAD 215x or BUAD 306.

FBE 437 Entrepreneurial Finance: Financial Management for Developing Firms (4, Fa) Internal financial management of developing firms. Cash flow analysis; capital budgeting; sources of financing; risk analysis; measurement of profits; and mergers and acquisitions. *Prerequisite:* BUAD 215x or BUAD 306.

FBE 440 Trading and Exchanges (4, Sp) Theories, practices, and technologies of trading at exchanges and in dealer networks. Sources of liquidity, volatility, profitability, and institutional change. Domestic and international public policy issues. *Prerequisite:* BUAD 215x or BUAD 306.

FBE 441 Investments (4, FaSp) Theories and applications of investment decision-making; the behavior of security prices, portfolio theory, asset pricing models, market efficiency, bond valuation and term structure, derivative securities. *Prerequisite:* BUAD 215x or BUAD 306.

FBE 443 Introduction to Forecasting and Risk Analysis (4) Introduction to econometric tools and versions of Capital Asset Pricing Models to estimate financial risk, stock market risk premia and to project economic activity. *Prerequisite:* BUAD 215x or BUAD 306 and BUAD 310.

FBE 445 Topics in Economic Analysis of Business Strategy and Policy (4, FaSpSm) Development of economic analysis to define and analyze strategy and policy options. Topics may include pricing and investment strategy using game-theory, and employee compensation and motivation, or investment in emerging markets. *Prerequisite:* BUAD 350 and BUAD 351, or ECON 351x and ECON 352x.

FBE 446 Advanced Topics in Portfolio Management and Investment Strategy (4) Covers real-world topics in investment theory and practice. It bridges the gap between theory and real-world portfolio management and investments. *Prerequisite:* BUAD 306.

FBE 453ab Advanced Practicum in Investment Management (4-4) *a:* Application of investment management techniques in a laboratory setting. Stock selection, asset allocation, industry analysis, investment thesis research; off-site visits; oral and written presentations. *Prerequisite:* BUAD 215x or BUAD 306; *corequisite:* FBE 421 or FBE 441. *b:* Application of advanced investment management techniques in a laboratory setting. Bond portfolio management, quantitative stock screens, derivatives trading, portfolio optimization. Off-site visits and presentations. Open only to senior business majors.

FBE 458 Law, Finance and Ethics (4, FaSpSm) Law and ethics of agency, partnerships, corporations, limited liability companies, governmental regulation, mergers, creditor rights, secured transactions, bankruptcy, securities regulation, and antitrust.

FBE 459 Financial Derivatives (4, Fa) A rigorous introduction to the pricing and corporate use of financial derivatives — futures, options, forwards, and swaps — on stocks, exchange rates, bonds, and commodities. *Prerequisite:* BUAD 215x or BUAD 306.

FBE 460 Mergers, Acquisitions and Restructuring (4, FaSpSm) Practical understanding of the major strategic, economic, financial, human resources, and governance issues of mergers, acquisitions, and restructuring. *Prerequisite:* BUAD 215x or BUAD 306.

FBE 462 International Trade and Commercial Policy (4, FaSp) Commercial policies and treaty relationships; examination of export-import problems and national policies influencing world trade and finance. Open only to sophomores, juniors and seniors. *Prerequisite:* ECON 203 and ECON 205; or ECON 351x and ECON 352x.

FBE 464 International Finance (4, FaSp) Introduction to the international financial system: foreign currency spot, forward, futures, options markets; exchange rate determination under flexible and fixed rate regimes; foreign exchange risk and elementary hedging techniques; Eurobanking. *Prerequisite:* BUAD 310.

FBE 466 Management of Real Estate Development: Feasibility Studies (4, Sp) By means of a significant real-world case study chosen each term, the development process is examined from the interrelated perspectives of finance, market analysis, and design and construction technology. Team-generated development proposals are proposed and presented in a consulting environment that includes industry participants. *Prerequisite:* FBE 391 and FBE 470 or FBE 400x.

FBE 470 Advanced Real Estate Analysis (4, FaSp) Mixed lecture/case approach covering market analysis, asset valuation, ownership structure, negotiation, asset management, corporate real estate, portfolio management, and affordable housing, appraisal and advanced financial modeling. (Duplicates credit in former FBE 465.) *Prerequisite:* FBE 391.

FBE 489 Real Estate Capital Markets (4, Fa) Topics in real estate capital markets including markets for debt and equity; residential and commercial mortgages and mortgage-backed securities; REITs; institutional sources of capital. *Prerequisite:* BUAD 215x or BUAD 306.

FBE 499 Special Topics (2-4, max 8, FaSpSm) Current developments in the field of finance and business economics; topics to be selected each semester. *Prerequisite:* BUAD 215x or BUAD 306.

FBE 515 Deals (3-4) (Enroll in LAW 815)

FBE 523 Private Equity (3, Fa) Advanced analysis of the institutions and economics of the private equity markets. We consider the perspectives of private equity partnerships, entrepreneurs, and investors. *Prerequisite:* GSBA 521b or GSBA 548.

FBE 524 Money and Capital Markets (3, Fa) Review of financial institutions and markets, the determinants of interest rates, the impact of government regulation and policy on the financial system. *Prerequisite:* GSBA 511; GSBA 521b or GSBA 548; GSBA 544 or GSBA 549 or GSBA 580.

FBE 525 Financial Institution Management, Strategy and Valuation (3, Fa) Application of economic and financial analytic techniques to the managerial problems of financial institutions and implications for financial firm strategy and valuation. *Prerequisite:* GSBA 521b or GSBA 548.

FBE 526 Macroeconomic Analysis for Business (3, Sp) The economic environment of business: American economic and social goals and policies and their impact on business; growth, stability, and the new priorities; international forces influencing business. Open only to graduate business and accounting students.

FBE 527 Entrepreneurial Finance: Financial Management for Developing Firms (3, FaSp) Internal financial management of developing firms. Cash flow analysis; capital budgeting; sources of financing; risk analysis; measurement of profits; and mergers and acquisitions. *Prerequisite:* GSBA 521b or GSBA 548.

FBE 529 Financial Analysis and Valuation (3, FaSp) An applications-oriented course to develop the financial and accounting tools required to do financial planning valuation and assessment of financial performance. *Prerequisite:* GSBA 521b or GSBA 548.

FBE 531 Corporate Financial Policy and Corporate Governance (3) Advanced analysis of the determinants of corporate capital structure and payout policies, allocation and value of corporate control, and security issuance and retirement. *Prerequisite:* GSBA 521b or GSBA 548.

FBE 532 Corporate Financial Strategy (3, FaSpSm) Linkage between financial theory and policy and corporate strategy; the role of financial managers in developing corporate strategy; applications of concepts and techniques using cases. *Prerequisite:* GSBA 521b or GSBA 548.

FBE 533 CEO Pay, Incentives, and Corporate Governance (3, Sp) How value is created (or destroyed) through compensation and incentive systems. Specific topics include incentive contracts, performance measurement, performance standards, and executive compensation. *Prerequisite:* GSBA 521b or GSBA 548.

FBE 535 Applied Finance in Fixed Income Securities (3, Sp) The basic principles underlying fixed income securities and how these principles apply to the practical aspects of fixed income management. *Prerequisite:* GSBA 521b or GSBA 548.

FBE 540 Hedge Funds (3, FaSp) Introduction to the investment strategies used by hedge funds, the quantitative tools and business plans used to implement them. *Prerequisite:* GSBA 521b or GSBA 548; *recommended preparation:* statistics and calculus.

FBE 553ab Applied Portfolio Management (a: 3, Fa; b: 3, Sp) a: Application of portfolio management techniques in a laboratory setting. Stock selection, asset allocation, industry analysis, investment thesis research; off-site visits; oral and written presentations. *Prerequisite:* GSBA 521b or GSBA 548; *corequisite:* FBE 555. b: Application of advanced portfolio management techniques in a laboratory setting. Bond portfolio management, quantitative stock screens, derivatives trading, portfolio optimization. Off-site visits and presentations.

FBE 554 Trading and Exchanges (3, Sp) Theories, practices, and technologies of trading at exchanges and in dealer networks. Sources of liquidity, volatility, profitability, and institutional change. Domestic and international public policy issues. *Prerequisite:* GSBA 521b or GSBA 548.

FBE 555 Investment Analysis and Portfolio Management (3, FaSp) Analysis and management of common stocks and fixed income securities; development of modern portfolio theory and the efficient market hypothesis; organization of securities markets. *Prerequisite:* GSBA 521b or GSBA 548.

FBE 557 Business Law and Ethics (3, FaSpSm) Business law of traditional and e-contracts, UCC, crimes, torts, employment, ethics, social responsibility, intellectual property, digital law, e-commerce, accountants' liability, property, estates, and government regulation. Open only to graduate business and accounting students.

FBE 558 Legal Environment of Business and Corporate Governance (3, FaSpSm) Legal environment of agency law, general and limited partnerships, limited liability companies, corporate formation and financing, corporate governance, securities law, acquisitions, bankruptcy, and business ethics. Open only to graduate business and accounting students.

FBE 559 Management of Financial Risk (3, FaSp) Analysis of commodity, futures, and options contracts; theoretical and empirical approaches; spot and futures price relationships, speculation and hedging strategies; market efficiency. *Prerequisite:* GSBA 521b or GSBA 548.

FBE 560 Mergers and Acquisitions (3, Sp) Practical application of the critical components of mergers and acquisitions: deal flow strategies, preliminary negotiations, deal structures, due diligence, valuation, post-merger integration, and regulations. *Prerequisite:* GSBA 521b or GSBA 548.

FBE 562 Current Issues in International Finance (3, Fa) International monetary relations, financial markets, and institutions; theory and evidence of alternative approaches to balance of payments; current policy evaluation. *Prerequisite:* GSBA 511; GSBA 544 or GSBA 549 or GSBA 580.

FBE 563 Theory of International Trade (3, Sp) Comparative advantage and gains from trade; factor proportions and efficiency; factor price equalization; terms of trade; tariffs, customs, unions and trade agreements. *Prerequisite:* GSBA 511; GSBA 544 or GSBA 549 or GSBA 580.

FBE 564 International Financial Management (3, Sm) Financial management of the multinational firm; legal entities and taxation abroad; risk in foreign operations; strategies in foreign exchange, money and capital markets and institutions. *Prerequisite:* GSBA 521b or GSBA 548.

FBE 565 Economics of Urban Land Use: Feasibility Studies (3, Sp) Economic, market and financial analysis related to feasibility of real estate development; theory and case analysis. *Prerequisite:* FBE 589 or GSBA 511 or GSBA 521b or GSBA 548.

FBE 566 Real Estate Finance, Investments and Development (3, Sm) Analysis of economic and financial aspects of real estate decisions for students not concentrating in real estate. Dynamics of financing, markets and the development process. Not open to business, accounting and construction management students.

FBE 570 Advanced Topics in Real Estate Finance (3, Fa) Current topics in real estate finance including sources of equity and debt, the role of capital markets, REITs, conduits, portfolio analysis, and acquisition of distressed assets. Cases and analytic methods. *Prerequisite:* GSBA 521b or GSBA 548; *recommended preparation:* FBE 591.

FBE 571 Introduction to Financial Analysis: Practicum (3, FaSp) This introductory financial analysis (tools, techniques) practicum, emphasizes practical application of asset valuation and portfolio management techniques for those with little previous experience. (Duplicates credit in FBE 572 and FBE 573.) Graded CR/NC. *Prerequisite:* GSBA 548 or GSBA 521b.

FBE 572 Intermediate Financial Analysis: Practicum (3, Sp) This practicum emphasizes asset valuation, including applications of tools and inputs (including economics, accounting, and quantitative techniques) in asset valuation for those with prior experience. (Duplicates credit in FBE 571 and FBE 573.) Graded CR/NC. *Prerequisite:* GSBA 548 or GSBA 521b.

FBE 573 Advanced Financial Analysis: Practicum (3, Sp) This is an advanced practicum emphasizing portfolio management skills, including applied strategies (tools, inputs) in equity and fixed-income management for those with extensive prior experience. (Duplicates credit in FBE 571 and FBE 572.) Graded CR/NC. *Prerequisite:* GSBA 548 or GSBA 521b.

FBE 587 Legal and Regulatory Environment of Long Term Care (4, Fa) Comprehensive overview of substantive business law topics and issues as they affect the long term care industry. (Duplicates credit in FBE 557, FBE 558.)

FBE 588 Advanced Real Estate Law (3, SpSm) Legal aspects of real estate transactions; partnerships, syndicates, and other ownership forms. Legal aspects of land use control, zoning and environmental impact reports.

FBE 589 Mortgages and Mortgage-Backed Securities and Markets (3, Fa) Valuation and analysis of residential and commercial mortgages and mortgage-backed securities and related markets. *Prerequisite:* GSBA 521b or GSBA 548.

FBE 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

FBE 591 Real Estate Finance and Investment (3, FaSp) Analysis of investment in and financing of real estate assets including projections, valuation, deal structure, contracts, portfolio and tax and entity considerations. *Prerequisite:* GSBA 521b or GSBA 548.

FBE 592 Field Research in Finance or Business Economics (.5-4, max 12, FaSpSm) Individual or team projects studying the business practices of an industry, company, government agency, country, geographic region, etc. Proposal, data collection, analyses, and written report. Open only to master's and doctoral students. Graded CR/NC.

FBE 593 Independent Research in Finance or Business Economics (.5-4, max 12, FaSpSm) Independent research beyond normal course offerings. Proposal, research and written report/paper required. Open only to master's students. Graded CR/NC.

FBE 595 Internship in Finance or Business Economics (.5-2, max 9, FaSpSm) Supervised on-the-job business experience in the student's area of interest. (Curricular Practical Training.) Open only to graduate business and accounting majors. Graded CR/NC. *Recommended preparation:* Completion of required MBA, M.Acc., or MBT course work.

FBE 596 Research Practicum in Finance or Business Economics (.5-2, max 8, FaSpSm) Hands-on practical experience working with a Marshall faculty member in the Finance and Business Economics Department on an ongoing research project. Open only to master's and doctoral students. Graded CR/NC.

FBE 597 Consulting Project in Finance or Business Economics (.5-5, max 12, FaSp) Individual or team project solving real business problems for an existing business entity, domestic and/or international. Proposal, field research, analyses and oral and written presentations. Open only to master's and doctoral students. Graded CR/NC.

FBE 599 Special Topics (1, 1.5, 2, or 3, max 9, Irregular) Current developments in the field of Finance and Business Economics; topics to be selected each semester.

FBE 652 Financial Economics I (3, Irregular) Doctoral level seminar in financial economics; concentration on corporate finance theory and evidence.

FBE 653 Financial Economics II (3, Irregular) Doctoral level seminar in financial economics; concentration on contingent claims and continuous time models.

FBE 654 Ph.D. Seminar-Empirical Research Methods in Finance (3, Irregular) Empirical financial research methods are introduced. Applications are discussed and critiqued. Special attention is given to new statistical methods and to identifying fruitful research programs.

FBE 655 Financial Economics III (3, Sp) Doctoral-level seminar in financial economics; concentration on the theory of corporate governance and incentives in organizations.

FOOD INDUSTRY MANAGEMENT (FIM)

FIM 420 Food Retailing Management (4, Sp) Strategic techniques of merchandising, pricing, and distributing products in the food industry with emphasis on new product development, including market segmentation and positioning.

FIM 480 Food Industry Financial Accounting and Analysis (4, Sp) Analysis of financial statements from food industry; cost and management accounting techniques in business planning, decision-making, cost control, and performance evaluation.

FIM 481 Food Marketing Research (4, Sp) Application of marketing research tools and techniques to problems of the food industry. Development of a major consumer research project.

FIM 582 Food Industry Decision-Making (4, Sp) Involvement with specific management situations related to the food industry, its environment, and its consumers. Emphasizes managerial functions and decision-making through case studies.

GRADUATE SCHOOL OF BUSINESS ADMINISTRATION (GSBA)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

Registration for most courses designated GSBA is restricted to students admitted to graduate business programs only. For a listing of courses in which non-business students may enroll, consult the *Schedule of Classes*.

GSBA 502 Management Communication for Leaders (3, Fa) Integrates leadership theory and practice with communication skills to improve individual, team, and organizational performance. Emphasizes interpersonal, presentation, and writing skills; teamwork; and value-based leadership. (Duplicates credit in GSBA 523, GSBA 542 and the former GSBA 502ab.) Open only to master's students.

GSBA 504ab Operations Management (1.5, 1.5, Fa) Formulation, modeling, analysis, and optimization of business decision problems; survey of concepts and techniques necessary to manage the operations function of a firm. (Duplicates credit in GSBA 534 and former GSBA 504.)

GSBA 506ab Applied Managerial Statistics (1.5-1.5, FaSp) Principles of probability theory and classical statistics applied to business decision problems; survey analysis, estimation and prediction methods, evaluation, and control techniques. Graded IP/letter. (Duplicates credit in GSBA 524.)

GSBA 509ab Marketing Management (1.5, 1.5, Fa) Development of analytical, strategic, and planning skills. Application within an integrated strategic framework to the development of a comprehensive marketing plan for a product, service, and/or organization. (Duplicates credit in GSBA 528 and the former GSBA 509.)

GSBA 510 Accounting Concepts and Financial Reporting (2, 3, Fa) Information systems for public reporting and for management decision-making; theory of asset and income measurement; interpretation and uses of accounting data and financial statements; analysis of cases.

GSBA 511 Microeconomics for Management (2, 3, Fa) Microeconomic theory with business applications; consumer demand, production theory, cost theory, and market theory; decision-making within the firm under different market and regulatory environments.

GSBA 514 Foundations of Business I and II (6, Sm) Introduction of business fundamentals to graduate students with non-business undergraduate degrees. Economics, finance, marketing, operations management and general management concepts are introduced with a global perspectives. *Prerequisite:* GSBA 510 or ACCT 525x.

GSBA 518 Accounting Control Systems (3, Sm) Accumulation and interpretation of accounting data by management; profit planning; analysis of operations; systems for control of production and distribution costs; cost and profit centers for decentralized control. (Duplicates credit in former GSBA 517ab and GSBA 536.) *Recommended preparation:* GSBA 510.

GSBA 519ab Strategic Formulation for Competitive Advantage (1.5-1.5, FaSm) Analyses of environments and competition, the basis of competitive strategy, strategy models, and the achievement of sustainable competitive advantage. (Duplicates credit in GSBA 529 and GSBA 540.)

GSBA 520 Business Fundamentals for Non-Business Professionals (3, FaSp) An overview of concepts, tools and principles of business management to develop a general management point of view. Open only to non-business graduate students.

GSBA 521ab Corporate Finance (1.5, 1.5, Fa) Basic principles of corporate finance; theory and application; management of short-term and long-term assets; financial instruments and markets; financial policy applications. (Duplicates credit in GSBA 548 and the former GSBA 521.) *Recommended preparation:* GSBA 510.

GSBA 522ab Managerial Perspectives (1.5-1.5, FaSp) Managerial careers, development of critical executive and managerial abilities, and the dynamics of organizational environment and systems as they impact managerial progression and work. Graded IP/letter. (Duplicates credit in GSBA 532 and GSBA 543.)

GSBA 523 Communication for Management (2-3, FaSp) Internal and external communication, research methods; reports for decision-making; oral presentations and briefings; strategies to assure communication; field studies. (Duplicates credit in GSBA 502, GSBA 542, and the former GSBA 502ab.)

GSBA 523T Communication for Accounting and Tax Professionals (3) Communication strategies to ensure effective communication to internal and external business audiences at all levels; business writing and presentations; electronic communication; communicating ethics in business. Open only to accounting, business taxation, law/business, and taxation majors. (Duplicates credit in GSBA 502, the former GSBA 502b, GSBA 523 and GSBA 542.)

GSBA 524 Managerial Statistics (2, 3, Fa) Principles of probability theory and classical statistics applied to business decision problems; survey analysis, estimation and prediction methods, evaluation, and control techniques. (Duplicates credit in GSBA 506ab.)

GSBA 525 Politics for Global Managers (3, Irregular) The dynamic forces shaping the political environment of business. Impact of politics, cultures and world events on multinational enterprise. Case studies of political risk assessment.

GSBA 528 Marketing Management (3, Sp) Marketing is treated as a managerial decision-making process. Emphasis is given to understanding the concepts, tools, and techniques that comprise a comprehensive marketing strategy. (Duplicates credit in GSBA 509ab.)

GSBA 529 Strategic Formulation for Competitive Advantage (3, FaSpSm) Analyses of environments and competition, the bases of competitive strategy, strategy models, and the achievement of sustainable competitive advantage. (Duplicates credit in GSBA 519ab and GSBA 540.) *Recommended preparation:* completion of first year courses.

GSBA 532 Behavior and Organizations (3, Sp) Individual behavior (motives, cognitive process, learning), interpersonal processes (perception, communication), small group dynamics (power, productivity, and morale), and organization theory and development (culture, design). (Duplicates credit in GSBA 522ab and GSBA 543.)

GSBA 533 Organizational Behavior and Leadership (1.5, Fa) Maximize organizational effectiveness through managing team and individual processes. Topics may include ethics, decision making, motivation, power and influence, organizational culture and change, negotiation. (Duplicates credit in GSBA 522ab, GSBA 532, GSBA 543.)

GSBA 534 Operations Management (2-3, Sm) Formulation, modeling, analysis, and optimization of business decision problems; survey of concepts and techniques necessary to manage the operations function of the firm. (Duplicates credit in GSBA 504ab.) *Recommended preparation:* GSBA 506b or GSBA 524.

GSBA 536 Management Accounting (1.5, Sp) The use of accounting information to formulate strategic managerial decisions in a global business environment. (Duplicates credit in former GSBA 517ab and GSBA 518.)

GSBA 540 Contemporary Issues in Competitive Strategy (1.5, FaSp) Introduces the role industry and competitive analysis serves in an organization. Topics covered include global competition, innovation, the use of standards, competence, and building organizational capabilities to sustain competitive advantage. (Duplicates credit in GSBA 519ab and GSBA 529.)

GSBA 542 Communication for Management (1.5, Fa) Internal and external communication, research methods, reports for decision-making, oral presentations and briefings, strategies to assure communication; field studies. (Duplicates credit in GSBA 502, GSBA 523, GSBA 523T and the former GSBA 502ab.)

GSBA 543 Managerial Perspectives (3) Managerial careers, development of critical executive and managerial abilities, and the dynamics of organizational environment and systems as they impact managerial progression and growth. (Duplicates credit in GSBA 522ab, GSBA 532, GSBA 533, and GSBA 543.)

GSBA 544 The Firm in the National Economy (1.5, Sp) The economic environment of business and the forces influencing the firm. (Duplicates credit in former GSBA 526 and GSBA 549.)

GSBA 548 Corporate Finance (3, Sp) Modern theory of corporate investment and financing decisions. Open only to Master's and Doctoral students. (Duplicates credit in GSBA 521.) *Recommended preparation:* introductory finance course.

GSBA 549 The Firm in the National and International Economy (3, Sp) The economic environment of business and international forces influencing the firm. (Duplicates credit in former GSBA 526 and GSBA 544.)

GSBA 554 Digital Strategies for Sustainability in Global Markets (3, Sp) Designing and executing business strategies for sustainability (environmental, economic, social/cultural) enabled by digital technologies. Emerging market contexts; team consulting project; international travel. Open only to graduate business and accounting students.

GSBA 555 Management and Organization of the Creative Industries (3, Sp) How creative industries (motion pictures, television, publishing, radio, music, arts, games) operate and are organized. Critical discussion of pressing issues that these industries face. Open only to graduate business and accounting students.

GSBA 556 Business Models for Interactive Digital Media and Services (3, Sp) Business models and business development for products/services delivered through interactive digital platforms; assessing growing niches in the evolving media/entertainment/telecom market space. Open only to graduate business and accounting students.

GSBA 560 The Perspective of Top Management (2, Fa) Using cases, students are introduced to top management issues of executive leadership, environmental and strategic analysis, use of financial statements, organizational assessment and design, technology management and decision support systems. Graded CR/NC.

GSBA 561 Evaluating Market Performance (9, Fa) Evaluation of the firm by the market forces that affect its success; financial accounting and reporting; competitive market analysis; external communication; microeconomics; labor, customer and financial markets, statistical and decision analysis, financial and organization measures of effectiveness.

GSBA 562 Management of Operations (11, Sp) Analysis of operations management and business functions; managerial accounting; finance; marketing; production; data processing and information systems; human resources management.

GSBA 563 Technology and Information Systems Management (6, Sm) Impact of technology on organizations; new product development; investment decisions and capital budgeting; decision support systems, expert systems; information technology; organizational design; management of information systems.

GSBA 564 Functional Strategies and Implementation (2, Sm) Developing functional strategies and interdependence to achieve organizational goals; negotiations, conflict resolution; communication strategies; organizational effectiveness; implementation and change strategies; self-assessment and individual presentations.

GSBA 568 The Economics and Marketing of a Professional Services Firm (3, Sp) Development of marketing skills required for a professional services firm. Examination of professional's role and responsibility to social and civic concerns, as well as role of a new consultant. Review of operational and administrative aspects within the organization.

GSBA 570 The Role of the Senior Executive (2, Fa) Introduction to strategic management; executive leadership; environmental analysis; international context; financial growth strategies; social, legal and macroeconomic issues; role of CEO with boards, media and other publics; business ethics, strategic planning project. Graded CR/NC.

GSBA 571 Environmental Analysis: Establishing Competitive Advantage (9, Fa) Development of strategic planning processes; analysis of economic, social, political environment; forecasting; futures research; macroeconomics; international economics; technological developments; multinational management simulation; field projects.

GSBA 572 Strategic Planning for Growth (11, Sp) Formulation and implementation of strategies in different organizational and environmental contexts; financial growth strategies; comparative management; impact of taxation; technology strategies; product development and new market strategies.

GSBA 573 Managing Strategic Change and Implementation (6, Sm) Management of the strategic change process for the total organization including implementing growth strategies, use of consultants, corporate governance, implementation in a multinational environment, leadership and power, use of technology, innovation, corporate cultures, executive succession, corporate relations.

GSBA 574 The Executive of the Future (2, Sm) Forecasting future environments; the role of the executive in the future, changing organizations; executive development; personal development goal setting.

GSBA 580 The Global Context of Business (4.5, Sp) Political, economic, and cultural forces in a global context. Effects on markets, policies, and strategies. Application to one or more specific countries. Requires international travel. (Duplicates credit in GSBA 582 and the former GSBA 515 and GSBA 526.) *Recommended preparation:* MBA core courses.

GSBA 581 Information Management (1.5, FaSp) The intersection of information technology and organization, strategy, marketing and other functional areas of business. The impact of information technology on various aspects of a firm.

GSBA 582 Business Environment and Management Practices in the Pacific Rim (3, SpSm) Explores the social, cultural, and political environment of business and management practices in the Pacific Rim. *Recommended preparation:* MBA core courses.

GSBA 584ab International Business Consulting Project (3-2, SpSm) a: IBEAR team consulting projects addressing international business problems. Projects culminate in written and oral presentations to corporate clients. Graded IP. b: continuation of a.

GSBA 586 Current Trends in Business (1.5, Sp) Study current issues in business, applying cross-discipline foundations and techniques — changing issues such as development of new business opportunities, technological change, and internationalization of commerce. *Recommended preparation:* MBA core courses.

GSBA 589 Industry-Based Business Theory and Practice (1.5, max 15, FaSp) Introductory seminar in the business theories, philosophies, structures and practices of various industries. Open only to graduate business and accounting students.

GSBA 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

GSBA 592 Field Research in Business (.5-4, max 12, FaSpSm) Individual or team projects studying the business practices of an industry, company, government agency, country, geographic region, etc. Proposal, data collection, analyses, and written report. Open only to master's and doctoral students. Graded CR/NC. *Recommended preparation:* completion of required MBA, M.Acc., or MBT course work.

GSBA 593 Independent Research in Business (.5-4, max 12, FaSpSm) Independent research beyond normal course offerings. Proposal, research and written report/paper required. Open only to master's students. Graded CR/NC.

GSBA 595 Internship in Business (.5-2, max 9, FaSpSm) Supervised on-the-job business experience in the student's area of interest. (Curricular Practical Training.) Graduate business students only. Graded CR/NC. *Recommended preparation:* Completion of required MBA, M.Acc., or MBT course work.

GSBA 596 Research Practicum in Business (.5-2, max 8, FaSpSm) Hands-on practical experience working with a Marshall faculty member on an ongoing research project. Open only to master's and doctoral students. Graded CR/NC. *Recommended preparation:* completion of courses required for the MBA, M.Acc., MBT, or Ph.D.

GSBA 597 Consulting Project in Business (.5-5, max 12, FaSpSm) Individual or team project solving real business problems for an existing business entity, domestic and/or international. Proposal, field research, analyses and oral and written presentations. Open only to master's and doctoral students. Graded CR/NC.

GSBA 599 Special Topics (1, 1.5, 2, or 3, max 9, FaSpSm) Selected topics reflecting current trends and recent developments in business administration. Emphasis on cross-disciplinary inquiry.

GSBA 602 Selected Issues in Economic Theory I (3, Fa) Methodology and research perspectives of economics; contribution of the economics paradigm to accounting, management, finance, marketing, and decision sciences. *Recommended preparation:* admission to doctoral program in business administration or department approval.

GSBA 603 Foundations of Statistical Inference (3, Fa) Theory and applications of statistical methods; review of probability theory and common distributions; exponential families; convergence concepts; law of large numbers; parameter estimation; hypothesis testing.

GSBA 604 Regression and Generalized Linear Models for Business Applications (3, Sp) Theory and application of linear regression models; role of substantive theory in statistical model building; model specification, estimation, diagnostic checking; the general linear hypothesis.

GSBA 610 Seminar in Business Research (3, max 9, Irregular) Critical analysis of research studies in the functional areas of business; practice in formulating and conducting research; presentation of original research of publishable quality (may be repeated for credit up to 9 units).

GSBA 611 Seminar in Research Methodology (3, FaSpSm) Conceptual foundations of research methodology; survey and research design; measurement theory; advanced techniques of statistical investigation; data analysis using computer packages; preparation of research reports.

GSBA 612 Selected Issues in Economic Theory II (3, Sp) Further investigation of selected topics in methodology and research perspectives of economics. Topics vary in response to new developments and current trends in the field. Open to doctoral program in business administration students only. *Prerequisite:* GSBA 602.

GSBA 625 Designing and Running Experiments (3, Fa) Introduction to design and implementation of experiments. Single and multiple factors, fully crossed and fractional factorial designs, repeated measures, measurement, manipulations, subject choice, demand effects. Open only to Ph.D. students.

GSBA 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

GSBA 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NP.

INFORMATION AND OPERATIONS MANAGEMENT (IOM)

IOM 401 Business Information Systems — Spreadsheet Applications (2, FaSp) Provides an applied understanding of how spreadsheets are used to analyze business information. Create real world software applications for use in accounting, finance, marketing and operations.

IOM 402 Business Information Systems — Database Applications (2, FaSp) Provides an applied understanding of how work group databases are used to analyze business information. Create real world software applications that are used in accounting, finance, marketing and operations.

IOM 424 Business Forecasting (4, Sp) A variety of forecasting techniques used by a variety of businesses. Emphasis on learning to apply these techniques to real data. *Prerequisite:* BUAD 310.

IOM 427 Spreadsheet Modeling, Optimization and Analysis (4, Fa) Application of decision analysis, simulation and optimization techniques to managerial problems. Students learn how to create and present useful spreadsheet models to analyze practical business problems. *Recommended preparation:* BUAD 310.

IOM 428 Data Warehousing and Data Mining (4, Sp) Introduction to data warehousing, multidimensional database, online analytical processing, and survey of data mining methods that extract useful information from data warehouses: e.g., decision tree. Business applications emphasized.

IOM 431 Managing the Digital Revolution for Your Business (4, FaSp) Specifics of digital technologies including Web 2.0, creating a Website, ERP, and CRM in a way to understand how these digital technologies can be used strategically by companies.

IOM 433 Business Information Systems Analysis and Design (4, FaSp) Information analysis and the logical specification of business systems, including logical design, physical design, and implementation; computer exercises and case studies.

IOM 435 Business Database Systems (4, FaSp) Computer-based management of data including data structures, conceptual data modeling, logical data modeling, structured query language (SQL), and physical optimization of high performance databases.

IOM 437 Technology-Enabled Global Businesses, Markets and Sourcing (4, Sp) Global markets for products, services, and strategies enabled by technology; spans businesses ranging from financial services, media and entertainment, and technology to specialized manufactured products.

IOM 440 Business Telecommunications (4, Irregular) Provides understanding of new telecom/information technology platform and how to exploit it to create information-based businesses, investment opportunities and increased corporate competitiveness.

IOM 441 Service Operations (4, Sp) Emphasis on managing and delivering successful services; for students who plan to work as managers in service organizations or to start their own service business. *Prerequisite:* BUAD 311.

IOM 443 The Business of Interactive Digital Media (4, Sp) Understanding the entertainment and media industries, and the effects of IT, the Internet, and mobile technologies on the business models and management of these industries.

IOM 444 Business Systems Networking and Information Security (4, Irregular) Technical and managerial business data communications, networking and security issues related to current business operations.

IOM 445 Business Information Systems Management and Strategy (4, Irregular) The intersection of information technology and organization, strategy and other functional areas of a business. A perspective of the impact of information technology on various aspects of a firm.

IOM 455 Project Management (4, Sp) Topics related to project management in a variety of industries such as real estate projects, new product launch, plant location, etc.

IOM 462 Managing a Small Business on the Internet (2, FaSp) Foundational knowledge for managing a small business on the Internet including strategies, tools, and resources integrated with hands-on skills for developing a small business Website.

IOM 482 Supply Chain Management (4, Fa) Issues in supply chain management. Supply chain performance and dynamics. Tools for planning, control and coordination. Supply chain design and strategy. *Prerequisite:* BUAD 311.

IOM 483 Operations Consulting (4, Sp) Study of concepts, frameworks and techniques for improving operations, formulation and implementation of operations strategy, and development of frameworks for process design, selection and performance evaluation. *Prerequisite:* BUAD 311.

IOM 499 Special Topics (2-4, max 8, Irregular) Selected topics reflecting current trends and recent developments in information systems, operations management, and statistics.

IOM 502 Operations Strategy (3, Sp) Provides students with a set of frameworks, analytical tools/concepts needed to design, evaluate, and implement strategies that effectively address management/operations of large systems effectively. Open to graduate business students only.

IOM 504 Strategic Sourcing (3, Fa) Examines the role of strategic procurement in supply-chain management organized into such topics as sourcing, outsourcing, e-procurement, and procurement integration collaboration. Open to graduate business students only.

IOM 505 Sustainable Supply Chains (1.5, Fa) Sustainability concepts and frameworks, design for environment, closed-loop supply chains, sustainability in sourcing, green facilities, renewable energy, facility location and transportation decisions, strategic sustainability implementation. Open only to graduate business and accounting students.

IOM 506 Sourcing and Supplier Management (1.5, Fa) Factors to consider when making sourcing decisions (costs, prices, ethics, globalization). Impact of sourcing on other activities such as product design or inventory management. Open only to graduate business and accounting students.

IOM 520 Logistics Management (3, FaSpSm) Gives students a managerial knowledge of basic logistics concepts and principles. Some topics include management of logistics cost integration, transportation, distribution, and customer service. Open only to master's and doctoral students in business and accounting.

IOM 521 Enterprise Systems (3, FaSpSm) Theory, methods, and techniques for solving organizational information processing problems using ERP software: selection, design, configuration, project and change management, architecture, process, implementation, and post-implementation. Open only to master's and doctoral students in business and accounting. *Recommended preparation:* completion of first-year MBA courses.

IOM 522 Applied Time Series Analysis for Forecasting (3, Sp) Survey of forecasting and time series methods. Models for stationary and nonstationary time series; ARIMA model identification, estimation, and forecast development. Seasonal and dynamic models. *Recommended preparation:* GSBA 506b or GSBA 524.

IOM 525 Quality Improvement Methods (3, Irregular) Quantitative and managerial approaches for improvement of quality and productivity in service and manufacturing operations; control charts, process capability assessment; implementation of quality improvement plans. *Recommended preparation:* GSBA 506b or GSBA 524.

IOM 527 Managerial Decision Analysis (3, Irregular) Decision making under uncertainty with applications to finance, marketing and operations. The decision analysis process for competitive decision situations and managerial risk taking. *Recommended preparation:* GSBA 506b or GSBA 524; and GSBA 534 or former GSBA 547b or GSBA 504b.

IOM 528 Data Warehousing, Business Intelligence and Data Mining (3, FaSpSm) Introduction to data warehousing, multidimensional database, online analytical processing, and survey of business intelligence applications that extract useful information from data warehouses: e.g., decision tree. Business applications emphasized.

IOM 529 Advanced Regression Analysis (3, Sp) Computer-assisted analysis of business data; advanced multiple regression analysis, survey analysis, ANOVA testing for Marketing-type applications and Times Series Analysis methods will be covered. *Prerequisite:* GSBA 506b or GSBA 524.

IOM 530 Applied Modern Statistical Learning Methods (3, Fa) Overview of highly computational modern statistical learning methods; applications of logistic regression, neural networks, LASSO, trees, boosting and GAM, etc., to finance and marketing data.

IOM 531 Managing Business in the Network Era (3, Irregular) Creating business advantage with IT, crafting business models, building networked business, making a case for a networked business, understanding inter-networking infrastructure, assuring reliable and secure IT outsourcing.

IOM 533 Information Systems Implementation (3, Irregular) How to implement information systems so they will succeed: business case analysis, requirements specification, CASE tools, IS risk management, interface design.

IOM 535 Database Management (3, Fa) Design, build and implement database systems at professional levels. Key topics include: process versus entity matrix, data modeling (enterprise, conceptual, logical), normalization, optimization and implementation. Open only to graduate business and accounting students.

IOM 537 Global Businesses and Markets: Strategies Enabled by Technology (3, Sp) Global markets for products and services and strategies enabled by technology; spans businesses ranging from financial services, media and entertainment, and technology to specialized manufactured products. Open only to graduate business and accounting students.

IOM 538 Information Systems Strategy (3, FaSm) Strategic aspects of managing information technology in organizations; concepts and principles of information management processes; behavior issues in implementation.

IOM 540 Managing Electronic Commerce (3, Irregular) Offers a conceptual framework to the study of electronic commerce. The purpose of the course is to give students a broad understanding of various aspects of electronic commerce: technological infrastructure, managerial implications of existing and emerging business models, and internal process changes to prepare companies for electronic commerce.

IOM 542 Developing a Firm's Intellectual Assets (3, Sm) Best practices in organizational knowledge creation, valuation and management; search engines, intelligent agents, and collaborative technologies; reengineering knowledge work. *Recommended preparation:* completion of first year MBA courses.

IOM 543 Global Business Issues in the Networked Digital Industry (3, FaSp) Assessing business impact of emerging technologies on companies, business models and strategies in the "converging" digital communications, media and entertainment industries: incorporates company field projects. Open only to graduate business and accounting students.

IOM 547 Designing Spreadsheet-Based Business Models (3, FaSpSm) Application of decision analysis, simulation and optimization techniques to managerial problems. Students learn how to create and present useful spreadsheet models to analyze practical business models. *Recommended preparation:* completion of first-year MBA courses.

IOM 551 Digital Transformation in the Global Enterprise (3, Sp) Leveraging large enterprise system applications for strategic value; managing organizational transformation of global enterprises through digital business platforms; coping with disruptive technologies. Open only to graduate business and accounting students.

IOM 557ab Global Supply Chain Management in International Settings (1.5-1.5, Fa) *a:* Study of global logistics infrastructures — water, rail, road, and air — through readings, team research and presentation, international site visits, and final written report. *b:* The influence of value-added services and regulatory issues on suppliers and supply chains. Readings, team research and presentation, site visits (LA), and final written report. Open only to Global Supply Chain Management majors.

IOM 580 Project Management (3, FaSp) Applications of systems theory and concepts, matrix organizational structures, PERT/CPM project modeling, and management information systems to the management of complex and critical projects. *Recommended preparation:* GSBA 504b or GSBA 534.

IOM 581 Supply Chain Management (3, FaSp) Issues in supply chain management. Supply chain performance and dynamics. Tools for planning, control and coordination. Supply chain design and strategy. *Recommended preparation:* GSBA 504b or GSBA 534.

IOM 582 Service Management: Economics and Operations (3, Sp) Examination of the service industry from a managerial and entrepreneurial perspective; emphasis on the tactical decisions needed to design and deliver successful and profitable services. Open only to business and accounting students. *Recommended preparation:* GSBA 504b or GSBA 534.

IOM 583 Operations Consulting (3, Sp) Development of conceptual and analytic skill for improving operations. Analysis of business strategy, formulating and implementing operations strategy, process analysis and design, and project management. Open only to graduate business and accounting students. *Recommended preparation:* GSBA 504b or GSBA 534.

IOM 584 Global Operations Management (3, FaSpSm) Students gain exposure to the spectrum of issues which are critical to the globalization of operations and basic tradeoffs associated with global operations management decisions. Open only to graduate students in business and accounting.

IOM 585 Principles of Service Operations Management (4, Fa) Investigation of the relationships among the target market, the systems, strategy, and the workforce that deliver services. Development of “state-of-the-art service thinking,” service management skills, and understanding processes. (Duplicates credit in the former GSBA 504b and GSBA 534, IOM 441, and IOM 582.)

IOM 588 International Perspectives in Global Supply Chain Management (3, Fa) Selected topics reflecting current trends and recent developments in global supply chain management from an international point of view. Open only to Global Supply Chain Management master's students.

IOM 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

IOM 592 Field Research in Information or Operations Management (.5-4, max 12, FaSpSm) Individual or team projects studying the management practices of an industry, company, government agency, country, geographic region, etc. Proposal, data collection, analyses, and written report. Open only to master's and doctoral students. Graded CR/NC. *Recommended preparation:* completion of required MBA, M.Acc. or MBT course work.

IOM 593 Independent Research in Information or Operations Management (.5-4, max 12, FaSpSm) Independent research beyond normal course offerings. Proposal, research and written report/paper required. Open only to master's students. Graded CR/NC.

IOM 595 Internship in Information or Operations Management (.5-2, max 9, FaSpSm) Supervised on-the-job business experience in the student's area of interest. (Curricular Practical Training.) Open only to graduate business and accounting majors. Graded CR/NC. *Recommended preparation:* completion of required MBA, M.Acc., or MBT course work.

IOM 596 Research Practicum in Information or Operations Management (.5-2, max 8, FaSpSm) Hands-on practical experience working with a Marshall faculty member in the Information and Operations Management Department on an ongoing research project. Open only to master's and doctoral students. Graded CR/NC.

IOM 597 Consulting Project in Information or Operations Management (.5-5, max 12, FaSpSm) Individual or team project solving real business problems for an existing business entity, domestic and/or international. Proposal, field research, analyses and oral and written presentations. Open only to master's and doctoral students. Graded CR/NC.

IOM 599 Special Topics (1, 1.5, 2, or 3, max 9, FaSpSm) Selected topics reflecting current trends and recent developments in operations management, information systems, and decision support systems.

IOM 606 Bayesian Data Analysis (3, Sp) Principles of Bayesian inference, subjective probability, posterior inference via Markov chain Monte Carlo, applications to latent variable models. Hierarchical models and shrinkage estimation. Model averaging. *Prerequisite:* GSBA 603.

IOM 670 Current Research in Operations Management (3, FaSp) Critique of the current research-based literature in operations management to include scheduling, forecasting, MRP, technology planning, inventory management, and facilities location and layout.

IOM 671 Inventory Models and Supply Chain Management (3, FaSp) Single product, single location inventory models; Multi-echelon inventory models; Assembly Systems; Inventory and Pricing; Value of Information; Incentives and coordination in supply chains. Open only to doctoral students.

IOM 672 Optimization Models in Operations Management (3, FaSp) Convex optimization, stochastic dynamic programming and non-linear programming. Focused training in optimization methods and proof techniques for research in operations management. Open only to Ph.D. students.

IOM 673 Mathematical Programming (3, FaSp) Integer programming; Duality Theory; Shortest path and Max Flow problems; Network flow; Matching problems; Convex sets and functions; Lagrange duality; Unconstrained minimization methods; optimization problems. Open only to doctoral students.

IOM 674 Queueing and Stochastic Networks (3, FaSp) Jackson Networks; Kelly Networks; The M/G/1 model and the Pollaczek-Khintchine formula; The G/G/1 queue; The GI/GI/1+GI queue and its diffusion approximation. Open only to doctoral students.

IOM 677 Dynamic Programming and Markov Decision Processes (3, FaSp) Introduction to Decision Analysis; MDP model formulation and examples; Finite horizon models; Infinite-horizon models: Discounted MDPs, Average reward criteria; Continuous-time models. Open only to doctoral students.

LIBRARY INFORMATION MANAGEMENT (LIM)

LIM 500 Fundamentals of Library and Information Science (3, FaSpSm) An overview of the history of recorded knowledge from ancient times to the digital age informed by the cultural implications of those eras. Open only to MMLIS students.

LIM 501 Fundamentals of Library Leadership and Management (3, FaSpSm) Fundamentals of library leadership and management from past, present and future perspectives, including selected case studies.

LIM 502 Collection Development and Management (3, FaSpSm) The development of library collections in all formats emphasizing clientele interest, usage patterns, bibliographical and Website sources. Open only to MMLIS students.

LIM 503 Organization, Access and Retrieval of Information (3, FaSpSm) An overview and critical analysis of current practices of information organization, cataloguing, access and reference services, including a conceptual understanding of these skills. Open only to MMLIS students.

LIM 504 Research Methods in Library and Information Management (3) An overview of research methods in information management including the conceptualization of research problems, literature reviews, research design, sampling, measurement, data collection and data analysis. Open only to MMLIS students.

LIM 510 Academic Librarianship (3) An examination of current research and future trends in academic librarianship, emphasizing the necessary partnership among information culture and technology, academic research and instruction. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 511 Instructional Strategies for Information Professionals (3) An overview of research in learning emphasizing the role of academic librarians as instructors and facilitators of information navigation. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 512 Instructional Technologies for Educators (3) An overview and critical analysis of past and current instructional technologies used primarily in academic libraries. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 513 Multicultural Information Perspectives (3) An examination of critical issues, theories and research in educating and serving diverse populations with an emphasis on social, cultural and linguistic imperatives. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 520 Library Information Systems Analysis and Design (3) The analysis and design of information systems from the perspectives of information theory, technology, retrievability, storage and shelf life, copyright, privacy and related issues. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 521 Database Management Systems for Information Professionals (3) An overview of and instruction in the skills required to build library and archival relational databases including data integrity, security, maintenance and extraction. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 522 Metadata and Taxonomies (3) An overview of developing and assessing metadata for digital resources including the different types of metadata schema, data dictionaries, taxonomies and emerging metadata standards. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 523 Information Delivery in the Digital Environment (3) An inventory and description of digital competencies, assessments and techniques followed by instruction, practice and testing of these competencies in simulated situations. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 530 Library Resource Management (3) An overview and assessment of planning, design, allocation and implementation of library finance and resource distribution in a variety of settings. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 531 Global Perspectives in Librarianship (3) An investigation of the theory and practice of librarianship in the context of international approaches to knowledge creation, research, learning, information discovery and presentation. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 532 The Social Context of Information (3) An examination of information in the context of social networks, media, and other cultural structures that inform teaching, learning and research. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 533 Operations Research in Libraries (3) Overview of theory and best practices in operations research and how it can be applied in a broad range of library and other information-focused settings. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 534 Library Fundraising and Development (3) An overview of fundraising and development including the internal organization of the fundraising and development enterprise, the cultivation of donors and related issues. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 550 Information Behaviors, Ethics and Policy (3) A study of information behaviors, policies and ethics including social networks, the interactive effects of information on users, users on information. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 551 Advanced Research Methods in Library and Information Management (3) Building on LIM 504, this course provides advanced research methods and analytical techniques and the application of these skills to complex library issues. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 553 Corporate and Business Librarianship (3) An examination and critical analysis of resources, research and literature in corporate librarianship, including collection development and management, access, reference and service patterns. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 554 Science Librarianship (3) An examination and critical analysis of resources, research and literature in science librarianship, including collection development and management, access, reference and service patterns. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 555 Social Science Librarianship (3) An examination and critical analysis of resources, research and literature in social science librarianship, including collection development and management, access, reference and service patterns. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 556 Health Sciences Librarianship (3) An examination and critical analysis of resources, research and literature in health sciences librarianship, including collection development and management, access, reference and service patterns. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 557 Cinematic Arts Librarianship (3) An examination and critical analysis of resources, research and literature in cinematic arts librarianship, including collection development and management, access, reference and service patterns. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 558 Art and Museum Librarianship (3) An examination and critical analysis of resources, research and literature in art and museum librarianship including collection development and management, access, reference and service patterns. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 559 Marketing and Communications Strategies for Libraries (3) An introduction to essential marketing concepts such as brand platform, value proposition and message development and their application in a library environment. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 560 Rare Books and Manuscripts (3) An overview of the organization, management, public and technical service operations and outreach involved in the development and operation of rare and special collections. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 561 Library Program Development and Evaluation (3) An overview of library program development and evaluation with an emphasis upon linking student learning outcomes to library programs. Qualitative and quantitative methods are covered. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 562 Library and Information Technologies (3) An overview of information technologies, information design and architecture (IA), information retrieval and electronic resources, computer networks, cloud technologies, data storage, web design. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 591 Research and Professional Applications (2, max 10, FaSpSm) Apply concepts learned during the MMLIS program and investigate research questions and professional problems of concern to employers, their institutions and the profession at large. Open only to Library and Information Science majors. Graded CR/NC.

LIM 598 Capstone in Library and Information Management (3) Student-driven research or project-based experience that integrates the knowledge from course work and applies it to current issues in the field. Graded CR/NC. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

LIM 599 Special Topics in Library and Information Management (3) Selected topics reflecting current trends and recent developments in library and information management. *Prerequisite:* GSBA 502, LIM 500, LIM 501, LIM 502, LIM 503, LIM 504.

MANAGEMENT AND ORGANIZATION (MOR)

MOR 252 The Art of Case Analysis and Presentation (2, FaSp) (Enroll in BUCO 252)

MOR 385m Business, Government and Society (4, Sp) Explores business-government-society interaction. Examines how diverse interests and identities (social class, race, nationality and gender) affect the conduct and organization of business.

MOR 421 Social and Ethical Issues in Business (4) The free-enterprise system examined from the perspective of modern corporations and their critics; business ethics in relation to personal/external values. *Prerequisite:* BUAD 304.

MOR 431 Interpersonal Competence and Development (4, Sp) An exploration of the nature of relationships at work; focus on analytical skills and self-assertion necessary to have effective, rewarding relationships. Laboratory simulations. *Prerequisite:* BUAD 304.

MOR 461 Design of Effective Organizations (4, Fa) Designing management systems and practices that lead to organizational excellence; techniques for organizational change. *Prerequisite:* BUAD 304.

MOR 462 Management Consulting (4, FaSp) Role of professional consultants; data gathering methods; consulting approaches from strategy, finance, operations, information systems, marketing, and human resources; action planning; ethical and career issues. *Recommended preparation:* BUAD 304.

MOR 463 Organization Change and Development (4, Sp) Theories and methods of introducing change in organizations. Techniques for analyzing organizations, developing change programs, and implementing changes. Ethical and career issues of change management. *Recommended preparation:* BUAD 304.

MOR 465 Advanced Methods in Strategy Analysis (4, Fa) Theories and methods for analyzing and developing strategy. Fundamental tools for strategic planning. Advanced methods for analyzing industries and competitors, and determining the scope of the firm. *Recommended preparation:* BUAD 497.

MOR 466 Business and Environmental Sustainability (4) Focuses on how businesses both contribute to and can help address environmental sustainability challenges and the role of the broader political-economy in shaping that interaction. Recommended for juniors and seniors only. (Duplicates credit in former ENST 450.) *Recommended preparation:* university-level course in economics.

MOR 467 Strategic Management of Technology and Innovation (4) Theories and methods for managing technology in organizations. Emphasizes project management, implementing technology, creativity, valuing technology, negotiating technical sourcing, and competitive intelligence/benchmarking. *Prerequisite:* BUAD 304.

MOR 468 Cross-Cultural Negotiations: Communication and Strategy (4, Sp) (Enroll in COMM 468)

MOR 469 Negotiation and Persuasion (4, FaSp) Theories, strategies, and ethics underlying negotiation and persuasion in contemporary organizations and societies. Emphasizes the knowledge and skills needed for effective negotiation and persuasion.

MOR 470 Global Leadership (4, Fa) Major theories and practices of leading people in multinational firms. Skills for facilitating cooperation, communication, and motivation among people from different cultures. *Recommended preparation:* BUAD 304.

MOR 471 Managing and Developing People (4, Fa) Management of the human resource function for organizational performance. *Recommended preparation:* BUAD 304.

MOR 472 Power, Politics and Influence (4, Fa) Theories and practices about how power, politics and influence affect organizational life. Knowledge and skills for diagnosing and managing these features of an organization.

MOR 473 Designing and Leading Teams (4, Sp) Theories and practices for developing and leading teams. Skills for creating team structures and facilitating team processes. Knowledge for diagnosing team problems and devising solutions. *Recommended preparation:* BUAD 304.

MOR 474 Leading Successful Professional Service Firms (4) Explores issues (1) managing professional service firms (PSFs) including strategy, client relationships, marketing, and innovation, and (2) developing professionals, including selecting, training, performance management, mentorship, and innovation.

MOR 479 The Business of Sports (4, Sp) Addresses the business side of the sports industry; examines professional sports franchises, amateur athletics, and collegiate sports and how they relate to corporate America, the media, and the public sector. *Recommended preparation:* BUAD 304.

MOR 485 The Rhetoric of Investing and Valuation (4) Analyzes the rhetoric of classic investment texts and news on investing/financial markets; investigates how rhetorical arguments shape and influence the valuation and investing process.

MOR 492 Global Strategy (4, FaSp) Examination of corporate strategy practices in an international context. Effects of cultures, political systems, markets, and economic systems on developing effective global strategies.

MOR 495 International Management and Internship (2-4) International internship. Develop general/cross-cultural knowledge and management skills, gain an understanding of cross-cultural issues, and develop insights working in international businesses. *Recommended preparation:* BUAD 304.

MOR 499 Special Topics (2-4, max 8) Selected topics reflecting current trends and recent developments in organizational behavior, business strategy and organizational theory.

MOR 542 Strategic Issues for Global Business (3, FaSpSm) Globalization strategies from entry to maturity; alternative approaches from going alone to alliances; strategy implementation issues in different cultures and political systems. Cases, videos and speakers. Open only to graduate students in business and accounting.

MOR 548 Competitive Advantage Through People (3, Sp) How firms develop employee talent as a source of competitive advantage. Strategic implications of contemporary practices in recruitment, work systems, training, compensation, and employee relations. Speakers and cases.

MOR 551 Human Capital Performance and Motivation (3, Sp) Frameworks for enhancing human capital performance motivation at work, including pay/incentive systems, job design, employee involvement, leadership behavior and self-managed teams. Cases, project and speakers. Open only to master's and doctoral business students.

MOR 554 Leading Innovation and Change (3, FaSm) Practical knowledge on helping organizations develop innovations and lead change to leverage them. Exploration of innovation and change in different organizations and competitive environments. Open only to graduate business and accounting students.

MOR 555 Designing High Performance Organizations (3, Sp) Theory and practice of organization design. How to maximize organization performance by aligning structure, rewards, staffing, processes, and culture with strategy and environment. Open only to graduate business and accounting students.

MOR 556 Leading Professional Service Firms (3) Teaches students with interest in consulting, investment banking, and companies in high-velocity environments how to manage careers, design, lead, and market adaptable and innovative organizations. Open only to graduate business and accounting majors.

MOR 557 Strategy and Organization Consulting (3, FaSp) How consultants assist clients to formulate strategic plans and realign organizations; approaches used by major consulting firms; information about consulting industry, fee-setting and proposals. Consultant speakers and project.

MOR 559 Strategic Renewal and Transformation (3, Fa) Dynamic strategic planning; how businesses reinvent themselves; why change is difficult; politics of change process; and leadership steps for implementing successful strategic changes. Cases and readings.

MOR 560 Managerial Judgment and Decision-Making (3, Sp) Development of skills and insight into making effective strategic, financial, and management decisions including awareness of hazards of decisions, issues of rationality, and risk taking. Open only to graduate business and accounting students.

MOR 561 Strategies in High-Tech Businesses (3, Fa)

How high-tech companies achieve competitive advantage through leveraging technical, management and financial resources. Technology trends and industry evolution. Focus on electronics and bio-technology. Cases and speakers.

MOR 562 Strategic Choice and Valuation Analysis (3, Fa)

Advanced strategic planning using tools of scenario development and activity valuation for assessing market entry, expansion and business portfolio configuration. Exercises, cases and project.

MOR 565 Alliances and Cooperative Strategy (3, Fa)

Essential issues and problems of cooperative strategy. Recognize and evaluate collaborative opportunities to develop and assess an overall cooperative strategy. Readings, cases and group project. Open only to graduate business and accounting students.

MOR 566 Environmental Sustainability and Competitive Advantage (3, Sp)

Explores the impact of environmental sustainability concerns on business. Reviews the forces driving change and business's strategic responses in various industries. Open only to graduate students in business, accounting, and green technologies.

MOR 567 Interpersonal Influence and Power (3, Sp)

Emphasizes legitimate and effective use of power to resolve conflicts and mobilize action through understanding the talent and self-interest of people involved in decision-making. Readings and cases.

MOR 568 Power and Politics in Organizations (3)

Explores current theories of power, politics and leadership within the organizational dynamic. Individual bases of power will be related to assessments of motives and skills. Open only to graduate students in business and accounting. *Recommended preparation:* GSBA 522ab or GSBA 532 or GSBA 533 or GSBA 543.

MOR 569 Negotiation and Deal-Making (3, FaSpSm)

Strategies and dynamics of deal-making; practical skills necessary to win in range of business transactions conducted in domestic and international settings. Cases, role-playing, films and simulations.

MOR 570 Leading Effective Teams (3, Sm)

Analytical and behavioral tools that will enable students to effectively diagnose complex work group dynamics and take action to improve group performance. Open only to Accounting and Business graduate students, including dual degrees.

MOR 571 Leadership and Executive Development (3, FaSp)

Contemporary approaches to leadership, including corporate practices to develop leaders; examples of successful and derailed executives. Students self-assess personal leadership and draft development plans. Readings, speakers, cases.

MOR 572 Leadership and Self-Management (3, Fa)

Successful leaders are effective at self-managing their thoughts, emotions and actions. Course provides concepts and methods for developing essential self-management skills. Open only to graduate business students.

MOR 573 Corporate Environmental and Social Issues (3, Sp)

Exploration of competing perspectives on business's role vis-a-vis investors, government, environment, customers, suppliers, employees, unions, NGOs, etc. Open only to master's and doctoral students in accounting and business, including dual degrees.

MOR 579 The Business of Sports Entertainment (3, FaSp)

Business practices and issues in different sports markets; including growth opportunities; and innovative marketing strategies for attracting and retaining fans and corporate sponsors. Industry speakers.

MOR 588 Corporate Strategy and Competitive Dynamics (3)

Central challenges facing executives in multi-business firms; toolkit for analyzing and executing strategic and operational aspects of corporate advantage, M&As and competitive dynamics. Open only to graduate business and accounting students.

MOR 590 Directed Research (1-12, FaSpSm)

Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MOR 592 Field Research in Management and Organization (.5-4, max 12, FaSpSm)

Individual or team projects studying the management practices of an industry, company, government agency, country, geographic region, etc. Proposal, data collection, analyses, and written report. Open only to master's and doctoral students. Graded CR/NC. *Recommended preparation:* completion of required MBA, M.Acc., or MBT course work.

MOR 593 Independent Research in Management and Organization (.5-4, max 12, FaSpSm)

Independent research beyond normal course offerings. Proposal, research and written report/paper required. Open only to master's students. Graded CR/NC.

MOR 595 Internship in Management and Organization (.5-2, max 9, FaSpSm)

Supervised on-the-job business experience in the student's area of interest. (Curricular Practical Training.) Open only to graduate business and accounting majors. Graded CR/NC. *Recommended preparation:* completion of required MBA, M.Acc., or MBT course work.

MOR 596 Research Practicum in Management and Organization (.5-2, max 8, FaSpSm)

Hands-on practical experience working with a Marshall faculty member in the Management and Organization Department on an ongoing research project. Open only to master's and doctoral students. Graded CR/NC.

MOR 597 Consulting Project in Management and Organization (.5-5, max 12, FaSp)

Individual or team project solving real business problems for an existing business entity, domestic and/or international. Proposal, field research, analyses and oral and written presentations. Open only to master's and doctoral students. Graded CR/NC.

MOR 599 Special Topics (1, 1.5, 2, or 3, max 9, FaSpSm)

Selected topics reflecting current trends and recent developments in management and policy sciences.

MOR 601 Seminar in Organizational Behavior (3, Irregular)

In-depth review of the theories and empirical research in the discipline of organizational behavior. Topics include: personality, motivation, job design, leadership, and others. Open only to doctoral students.

MOR 602 Seminar in Organization Theory (3, Irregular)

Survey of organization theory with focus on the history and development of research on organizations. Open only to business administration and public policy and management doctoral students.

MOR 603 Seminar in Strategic Management (3, Irregular)

Survey of strategic management. Topics include historical overview of strategic management, research methods used, current theory, and empirical research on the developing of paradigms. Open only to business administration doctoral students.

MOR 604 Research Methods in Strategy and Organization (3, Irregular)

Survey of research methods with focus on designing and implementing empirical research projects and critical issues faced by researchers. Open to doctoral program in business administration students only.

MOR 605 Research Methods in Organizational Behavior (3, Irregular)

Design and analysis of behavioral research; methods may include experiments, survey research, qualitative research, statistical analysis, special topics. Emphasis on rigor, validity and statistical power.

MARKETING (MKT)**MKT 405 Advertising and Promotion Management (4, FaSp)**

Role of advertising in the marketing mix: determining objectives, strategies, and plans from situation analysis through research and creative processes, media selection, and sales promotion. *Prerequisite:* BUAD 307 or COMM 200 or COMM 302 or JOUR 340.

MKT 406 Practicum in Advertising and Promotion Design (4, Sp)

Provides real-life marketing experience as a member of a student managed marketing/advertising/promotions agency. Work with a client organization on the design of an advertising/promotions campaign. Requires market research, creative design, implementation planning, and client presentation. *Prerequisite:* MKT 405 or JOUR 340.

MKT 410 Professional Selling (4, FaSp) Learn the principles of business to business selling and its function in marketing strategy and the marketing mix; explore professional selling as a career option. Open only to sophomores, juniors and seniors. *Prerequisite:* BUAD 307.

MKT 415 Sales Force Management (4, FaSp) Studies the role of managing the selling function as part of the marketing mix; planning, implementing, and controlling sales force operations; critical issues in selecting, training, compensating and supervising salespeople.

MKT 425 Direct Response and Internet Marketing (4, Sp) Role of direct response marketing in promotion and distribution including mail order marketing, Internet marketing, project testing, fulfillment management, career opportunities; case analyses. *Prerequisite:* BUAD 307.

MKT 430 Retail Management (4, Fa) Introduction to the functions of retail management including location, buying, merchandise management, layout, pricing, and promotion; application of concepts to various retail institutions.

MKT 435 Business to Business Marketing (4, Fa) Analysis of markets, nature of buying and selling, marketing intelligence, developing marketing strategy; product channel, price, promotion, setting strategic goals and measuring performance. *Prerequisite:* BUAD 307.

MKT 440 Marketing Analysis and Strategy (4, FaSp) Synthesis of concepts and applications relating to the analysis of market opportunities and the development of product, promotion, distribution, and pricing strategies. *Prerequisite:* BUAD 307; recommended during student's final semesters.

MKT 445 New Product Development and Branding (4, Fa) Examines how new product ideas are developed, test marketed and ultimately brought to the marketplace. Issues about why new products fail and how brand images are managed in the marketplace are discussed. Legal aspects of brand management such as trademark protection and infringement are also addressed. *Prerequisite:* BUAD 307.

MKT 446L Practicum in New Product Development (4, Sp) Provides experience in a student managed product team. Work with R&D organization to design a new product or technology. Involves market research and implementation planning. Open only to juniors and seniors. *Prerequisite:* MKT 445.

MKT 450 Consumer Behavior and Marketing (4, FaSp) Examines the relationship of consumer behavior to acquisition, usage, and disposition of products and the psychological, social and cultural influences that affect these decisions.

MKT 463 Pricing Strategies (4, FaSp) Examination of role of pricing decisions; innovative pricing theories; Internet and technology impact on pricing, price negotiations, customized pricing, price image and reference prices. *Prerequisite:* BUAD 307.

MKT 465 Global Marketing Management (4) Product and service mix in multinational business; promotional alternatives; channel of distribution systems; pricing policies and legal barriers; multinational marketing opportunities; problems and information sources. *Prerequisite:* BUAD 307.

MKT 470 Marketing Research (4, FaSp) Qualitative and quantitative aspects of market research to address substantive marketing problems such as identifying consumer needs, developing promotion strategies, and testing new business/product ideas. *Prerequisite:* BUAD 307 or JOUR 340; *recommended preparation:* BUAD 310 or COMM 301L or PSYC 274L or MATH 116.

MKT 499 Special Topics (2-4, max 8, FaSpSm) Current developments in the field of marketing; topics to be selected each semester. *Prerequisite:* BUAD 307.

MKT 512 Marketing and Consumer Research (3, Sp) Marketing research concepts and techniques; developing managers' ability to critically evaluate and utilize research information in the decision-making process. *Prerequisite:* GSBA 509a or GSBA 528.

MKT 525 Consumer Behavior (3, FaSm) Theories and applications of consumer behavior in marketing; psychological, social, cultural and ethnic factors influencing consumer behavior. *Prerequisite:* GSBA 509a or GSBA 528.

MKT 526 Advertising and Promotion Strategy (3, FaSp) Explains use of argument, emotion, endorsements for persuasive ads; tools for analyzing ad effectiveness, budgeting, media planning and scheduling; principles of pricing for creative promotion. *Prerequisite:* GSBA 509a or GSBA 528.

MKT 528 Sales Management: The Art and Science of Sales (3, FaSp) Emphasis on creating a sales strategy, planning and delivery of sales presentations, and techniques to persuade people to change their opinions in face-to-face meetings. Open only to master's students. *Prerequisite:* GSBA 509a or GSBA 528.

MKT 529 Customer Relationship Management (3, Fa) Development, analysis, evaluation and implementation of effective customer relationship management (CRM) programs. *Prerequisite:* GSBA 509a or GSBA 528.

MKT 530 New Product Development (3, FaSpSm) Systematic approach to product development and management; processes, techniques, and concepts firms use to develop, test, and introduce products and to manage products over their lifecycle. Open only to graduate students in business. *Prerequisite:* GSBA 509a or GSBA 528.

MKT 531 Services Marketing Strategy (3, Irregular) Analysis and development of sound marketing strategies and an integrated service management plan for service organizations. Examination of best practices among leading service providers. *Prerequisite:* GSBA 509a or GSBA 528.

MKT 533 Branding Strategy (3, Sp) Comprehensive treatment of the behavioral foundations of brands and brand development. Exploration of alternative branding strategies and marketing tools for brand development. *Prerequisite:* GSBA 509a or GSBA 528.

MKT 534 Retail Strategy (3, FaSp) Frameworks for analysis of retail strategy and functions of a retail firm, including buying, merchandise management, pricing, promotion, and visual merchandising; application of concepts through case studies and student projects. Open only to master's students. *Prerequisite:* GSBA 509a or GSBA 528.

MKT 535 Business Marketing Management (3, Irregular) Business-to-business and government market opportunities and marketing strategies; product development and adaptation, pricing, promotion and distribution to organizations as opposed to individual consumers. *Recommended preparation:* GSBA 509b or GSBA 528.

MKT 536 Pricing Strategies (3, Fa) The complexity of pricing is increasing due to globalization and the Internet. This course will develop a framework for developing strategic pricing decisions. *Prerequisite:* GSBA 509a or GSBA 528.

MKT 540 Marketing Models (3, Irregular) Analysis, use, and evaluation of quantitative and theoretical models of marketing management, consumer response, marketing resource use and control, and competitive interaction. *Recommended preparation:* GSBA 509b or GSBA 528.

MKT 543 Market Demand and Sales Forecasting (3, FaSp) New product concept testing and life cycle forecasting, pricing and advertising response forecasting, consumer purchase intentions, judgmental marketing decision models, time series and regression analysis, computer methods. *Prerequisite:* GSBA 509a or GSBA 528.

MKT 555 Marketing Channels (3, FaSp) Examination of strategic decision making in marketing channels with emphasis on the structure and management of channels. Intensity in distribution, vertical integration, how roles in the channel are formulated, types of intermediaries and multiple channels of distribution. *Prerequisite:* GSBA 509a or GSBA 528.

MKT 556 Internet Marketing (3, FaSp) All aspects of Internet marketing. Internet as a tool for marketing communication, sales and distribution, customer management. Role of paid advertising, search engines, Website design. *Prerequisite:* GSBA 509a or GSBA 528.

MKT 560 Marketing Strategy and Policy (3, FaSp) Integrated approach to the use of marketing tools and concepts in the formulation and execution of a marketing plan. *Prerequisite:* GSBA 509a or GSBA 528.

MKT 565 Global Marketing (3, FaSp) Variations in markets and trade patterns around the globe; product development and adaptation, pricing, promotion, and distribution issues across national cultures and international markets. *Prerequisite:* GSBA 509a or GSBA 528.

MKT 580 Strategies for Fostering Creativity in Business (3, Fa) An experiential course focused on understanding and developing the creative process. Creative exercises and techniques are developed and applied within a business context. Open only to graduate business and accounting students.

MKT 585 Marketing Radical Innovation (3, Fa) Study and application of new technology to create new business models, products, and services in world economies. Group projects focused on practical applications of concepts. (Duplicates credit in former GSBA 585.) *Prerequisite:* GSBA 509a or GSBA 528.

MKT 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MKT 592 Field Research in Marketing (.5-4, max 12, FaSpSm) Individual or team projects studying the marketing practices of an industry, company, government agency, country, geographic region, etc. Proposal, data collection, analyses, and written report. Open only to master's and doctoral students. Graded CR/NC. *Recommended preparation:* completion of required MBA, M.Acc., or MBT course work.

MKT 593 Independent Research in Marketing (.5-4, max 12, FaSpSm) Independent research beyond normal course offerings. Proposal, research and written report/paper required. Open only to master's students. Graded CR/NC.

MKT 595 Internship in Marketing (.5-2, max 9, FaSpSm) Supervised on-the-job business experience in the field of marketing. (Curricular Practical Training.) Open only to graduate business and accounting majors. Graded CR/NC. *Recommended preparation:* completion of required MBA, M.Acc., or MBT course work.

MKT 596 Research Practicum in Marketing (.5-2, max 8, FaSpSm) Hands-on practical experience working with a Marshall faculty member in the Marketing Department on an ongoing research project. Open only to master's and doctoral students. Graded CR/NC.

MKT 597 Consulting Project in Marketing (.5-5, max 12, FaSp) Individual or team project solving real business problems for an existing business entity, domestic and/or international. Proposal, field research, analyses and oral and written presentations. Open only to master's and doctoral students. Graded CR/NC.

MKT 599 Special Topics (1, 1.5, 2, or 3, max 9, FaSpSm) Examination of current literature and emerging and timely topics in marketing, social marketing, consumerism, macromarketing, marketing of individuals, organizations, and ideas. *Prerequisite:* GSBA 509a or GSBA 528.

MKT 613 Marketing Models in Consumer and Business-to-Business Markets (3, Fa) Modeling research on marketing with a focus on channel structure, franchising and sales force compensation, innovation and diffusion, inter-store composition, sales promotions, and market segmentation. (Duplicates credit in former MKT 605 and former MKT 613a.) Open to doctoral program in business administration students only.

MKT 614 Advanced Research Methods in Marketing (3, Sp) Applications of advanced research techniques and designs to marketing problems; review and critique of current literature; development and defense of student's own research proposal. (Duplicates credit in former MKT 661.)

MKT 615 Strategic and Marketing Mix Models (3, Sp) Modeling research on marketing with a focus on discrete choice models, consideration set models, purchase timing models, accounting for consumer heterogeneity, Bayesian models, dynamic models of consumer choice, market entry effects, product quality, advertising and carry over effects, price, and promotion. (Duplicates credit in former MKT 605 and former MKT 613b.) Open to doctoral program in business administration students only.

MKT 616 Understanding Consumer and Organizational Buying Behavior (3, Fa) Behavioral research and theory on marketing with a focus on goals, emotions, categorization and knowledge, inferences, attitudes, consumption, marketing and technology, organizational learning, new product development. (Duplicates credit in former MKT 602 and former MKT 612a.) Open to doctoral program in business administration students only.

MKT 618 Consumer Behavior and Decision Making (3) A foundation in judgment, decision-making, and choice aspects of consumer behavior and business. Topics include heuristics and biases, information acquisition, time perception, and intertemporal choice.

MKT 620 Advanced Quantitative Models in Marketing (3, FaSp) Techniques for building and analyzing advanced quantitative analytical models. Develop and estimate various state-of-the-art models of consumer choice and firm decisions. Open only to doctoral students.



The only private university program consistently recognized for excellence in accounting education, in 2013 the Leventhal School of Accounting was named by Public Accounting Report as having the fifth best undergraduate program and fourth best graduate program in the country. As part of the Marshall School of Business, Leventhal enables students to combine real-world skills with technical proficiency.

The USC Leventhal School of Accounting is dedicated to maintaining a leadership position in accounting education and research. We are committed to educational programs that seek to establish in each graduate the potential for career development into the highest executive levels of public accounting, controllership, financial management and management of accounting information systems. The accounting curriculum explores not only the state of the art but also seeks to explore the accounting discipline's future structures and directions. Relevant concepts and techniques from other academic disciplines are drawn upon and integrated into all accounting programs.

Accounting education has been an integral part of USC since 1920, when the Department of Accounting offered a Bachelor of Science degree in business administration with an emphasis in accounting. The Leventhal School of Accounting was established in 1979 in recognition of the growing importance of accounting to our economy and broader society. It continues to rank as one of the premier AACSB-accredited accounting programs in the nation.

Currently the Leventhal School of Accounting undergraduate program offers a Bachelor of Science accounting degree. Honors students may be eligible for early admission to the graduate program, an efficient way to complete both undergraduate and graduate degrees. An accounting minor is also offered to students outside the USC Marshall School of Business. Graduate programs include a full-time Master of Accounting or Master of Business Taxation; a Master of Business Taxation for working professionals; and a Juris Doctor/Master of Business Taxation in conjunction with the USC Gould School of Law. A Ph.D. degree with an accounting major is offered through the doctoral program in the Marshall School of Business.

USC Leventhal School of Accounting**Accounting 101****(213) 740-4838****FAX: (213) 747-2815****Email (graduate students):****MAcc.MBT@marshall.usc.edu;****(undergraduate students):****lsoa_undergrad@marshall.usc.edu****marshall.usc.edu/lsoa****Administration**William W. Holder, DBA, CPA, *Dean, Alan Casden**Dean's Chair at the Leventhal School of Accounting*Mark L. DeFond, Ph.D., CPA, *Associate Dean,**Academic Affairs*Shirley Maxey, B.A.*, *Associate Dean, Master's**Programs*Mildred G. Penner, M.A., *Assistant Dean,**Undergraduate Program***Faculty***George Bozanic and Holman G. Hurt Chair in Sports**and Entertainment Business: S. Mark Young, Ph.D.***Deloitte & Touche LLP Chair in Accountancy: Kenneth**A. Merchant, Ph.D., CPA**A.N. Mosich Chair in Accounting: Mark L. DeFond,**Ph.D., CPA***Accounting Circle Professor of Accounting: Randolph**P. Beatty, Ph.D., CPA**KPMG Foundation Professor of Accounting:**K.R. Subramanyam, Ph.D.**USC Accounting Associates Professor of Accounting:**Sarah E. Bonner, Ph.D., CPA***Arthur Andersen & Co. Alumni Associate Professor of**Accounting: Mark Soliman, Ph.D.***Professors: Jerry L. Arnold, Ph.D., CPA; Randolph P.**Beatty, Ph.D., CPA; Sarah E. Bonner, Ph.D., CPA*; Mark**L. DeFond, Ph.D., CPA*; William W. Holder, DBA, CPA;**Thomas W. Lin, Ph.D., CMA; Kenneth A. Merchant,**Ph.D., CPA; Daniel E. O'Leary, Ph.D., CPA, CMA, CISA;**K.R. Subramanyam, Ph.D.; Charles W. Swenson, Ph.D.*,**CPA; S. Mark Young, Ph.D.***Associate Professors: John J. Barcal, J.D., CPA*;**Mingyi Hung, Ph.D.*; James G. Manegold, Ph.D.*; Mark**Soliman, Ph.D., CPA; Robert H. Trezevant, Ph.D.*;**Shiing-Wu Wang, Ph.D.***Assistant Professors: Eric Allen, Ph.D., CPA; Elizabeth**Chuk, Ph.D.; David Erkens, Ph.D.; Yuri Loktionov, Ph.D.;**Maria Loumiati, Ph.D.; Maria Ogneva, Ph.D.; Marshall**Vance, Ph.D.; Jieying Zhang, Ph.D.**Professors of Clinical Accounting: Ruben A. Davila,**J.D., MBA, CPA; Chrislynn Freed, MBA, CPA*; Merle**Hopkins, Ph.D.*; Cecil W. Jackson, Ph.D., CPA; Joseph**L. Keller, M.S., CPA; Rose M. Layton, M.Acc., CPA*;**Shirley Maxey, B.A.*; Patricia Mills, J.D., LL.M.; Leslie**R. Porter, Ph.D.*; Robert S. Roussey, B.S., CPA; Robert**Scharlach, B.S., CPA; Kendall Simmonds, MBA, CPA***Associate Professor of Clinical Accounting: Robert**Kiddoo, MBA, CPA**Assistant Professors of Clinical Accounting: Robert**Shames, MBA, CPA; Zivia Sweeney, MBA, CPA***Senior Lecturer and Executive in Residence: Thomas**P. Ryan, MBA**Emeritus Professors: E. John Larsen, DBA, CPA;**Theodore J. Mock, Ph.D.; Anelise N. Mosich, Ph.D.,**CPA; Zoe-Vonna Palmrose, Ph.D.; Rodolph H.**Redmond, J.D.***Recipient of university-wide or school teaching award.***Degree Programs****Undergraduate Degree****Bachelor of Science, Accounting**

The USC Leventhal School of Accounting offers the Bachelor of Science, Accounting (B.S.) degree designed to provide students with a broad foundation in accounting and business to prepare them for entry into the professional program leading to a Master of Accounting or Master of Business Taxation degree. The undergraduate curriculum also provides the background necessary for direct entry into the accounting profession.

Graduate Degrees**Master of Accounting**

The Master of Accounting (M.Acc.) program provides an integrated curriculum designed to prepare graduates

for careers in professional accounting, public accounting, industry and government. Students have the opportunity to study accounting in greater depth than in undergraduate accounting programs or MBA programs with concentrations in accounting. Students have flexibility in course choices to reflect their career goals.

Admission does not require an undergraduate degree in accounting or business, nor is work experience a requirement. For students with an undergraduate degree in accounting the program requires 30–36 units for completion; for non-accounting students the program requires 45–54 units.

Master of Business Taxation

This specialized program in taxation requires 30–51 units (depending on undergraduate background) and is offered to full- or part-time students and leads to the Master of Business Taxation (MBT). The program is designed for accountants, attorneys and others who wish to learn or improve skills and knowledge through participation in advanced tax study. This group may be engaged in tax practice, in business management or in government administration.

Juris Doctor/Master of Business Taxation

The USC Gould School of Law and the Leventhal School of Accounting offer this dual degree program. Admission to the J.D. program offered by the Law School is required before applying to the MBT program offered by the Leventhal School of Accounting.

Master of Business Administration

The Master of Business Administration (MBA) with an optional accounting concentration, offered by the Marshall School of Business is also serviced by the Leventhal School of Accounting. For additional information, consult the Marshall School of Business section in this catalogue.

Doctor of Philosophy

The Marshall School of Business offers the Doctor of Philosophy (Ph.D.) degree in conjunction with the Graduate School. A student electing to major in accounting may design a research program that emphasizes auditing, financial accounting, information systems, management accounting and taxation. More information on the doctoral program is available in the Marshall School of Business section of this catalogue, or contact the doctoral office at (213) 740-0674 or the director of doctoral studies in accounting at (213) 740-4838.

Undergraduate Degree

Bachelor of Science, Accounting

The USC Leventhal School of Accounting Bachelor of Science, Accounting (B.S.) degree is designed to provide students with a broad foundation in accounting and business to prepare them for entry into the professional program leading to a Master of Accounting or Master of Business Taxation degree. The undergraduate curriculum also provides the background necessary for direct entry into the accounting profession. The B.S., Accounting degree is a 128-unit program.

Admission

Students may be admitted to the program as incoming freshmen, as USC undergraduates transferring from another major or as students transferring from another college or university. Admission to Leventhal is dependent on admission to the university and on academic performance, particularly in quantitative areas. USC students who have not been admitted to the major or the minor in the Marshall School of Business and/or the Leventhal School of Accounting may complete a maximum of 12 units from the Marshall School of Business

and/or the Leventhal School of Accounting. No further course work may be taken unless a student is admitted.

Leventhal/Marshall Honors

Leventhal/Marshall Honors is available upon graduation to majors in accounting or business administration and results in a special designation of departmental honors on a student's transcript. Acceptance to the program requires completion of at least 64 units of course work (including transfer units), a GPA of 3.5 or higher in course work to be applied to the major, an application,

and a successful interview with the director of the program. Achievement of Leventhal/Marshall Honors requires completion of ACCT 493 Honors Research Seminar (4 units) prior to the senior year, a thesis (research project and paper) conducted under the guidance of a Leventhal or Marshall faculty member during the senior year, and minimum GPA of 3.5 in upper-division Leventhal School of Accounting and Marshall School of Business courses applied to the major. For additional information, contact the Leventhal School of Accounting Undergraduate Program Office in ACC 101, (213) 740-4838.

Advisement

Academic advisement is provided through the Leventhal School of Accounting Undergraduate Program Office in Accounting 101, (213) 740-4838. Students are required to meet with an academic adviser before registering and this requirement remains in effect until 24 USC units are completed. However, all students are encouraged to see an academic adviser on a regular basis. A record of each student is kept on file. Appointments for advisement may be scheduled at most times during the academic year. However, during busy times such as the preregistration, registration and drop/add periods, advisers may be available on a walk-in basis only.

The Leventhal Undergraduate Program Office and Marshall Undergraduate Student Services offer students assistance in networking, finding internships, resume writing, interviewing techniques and other career-related issues.

Transferring College Credit College Courses

USC has established articulation agreements with most community colleges throughout California. Most academic courses are acceptable for transfer credit from a two-year school, but students may not receive credit for specialized, technical or remedial courses.

Courses that do not appear on the articulation agreement are not transferable. A maximum of 64 semester units may be transferred. Check with the Degree Progress Department (JHH 010) for questions about transferable courses or see a counselor in Accounting 101.

Official transcripts of college work taken elsewhere must be submitted, at the time of application, to the USC Office of Admission. A credit evaluation will be completed which will list transfer courses accepted for credit. All business courses completed at a two-year college, if transferable, will be considered elective credit.

There is one exception to this policy. Students may transfer two semesters of introductory accounting and receive credit equivalent to one semester of introductory accounting at USC. Then students can register for BUAD 305 Abridged Core Concepts of Accounting Information and complete their accounting course requirement in one semester at USC. In this case, students would not be required to take BUAD 285ab or BUAD 286ab.

Four Year Colleges

Most courses are acceptable for unit credit from all fully accredited four-year institutions. If the courses do not satisfy specific subject requirements at USC, they will be accepted for elective course credit.

Students are urged to complete all their required business administration courses at USC. All business courses from four-year institutions, if transferable, will be considered elective credit unless a challenge examination is passed. Only core classes, with the exception of BUAD 497, may be challenged. Students should consult with an academic adviser in Bridge Hall 104 to initiate the challenge examination process.

Grade Point Average Prerequisites for Transfer Students

Transfer students are required to meet the following grade requirements to be admitted to the Leventhal School of Accounting. An average grade of B in the two transferred accounting courses and BUAD 305 (with no grade lower than B-). Grades in accounting courses taken at other institutions will only be considered in meeting the admission requirement for the Leventhal School of Accounting. Once a transfer student completes a minimum of two accounting courses at USC, the student's accounting grades at the prior institution will no longer be considered in determining whether the student meets the 2.5 grade point average standard (see Grade Point Average Prerequisites following).

In the computation of grade point averages for accounting courses taken at other colleges or universities, the courses will be weighted in terms of the number of units provided for the equivalent USC accounting courses.

Grade Point Average Prerequisites

The following are grade point average prerequisites for any undergraduate student enrolled in any accounting course. Individual instructors may not waive these standards: (1) an average grade of B or better in BUAD 285ab or BUAD 286ab with no grade lower than a B-; and (2) a minimum 2.7 grade point average (A = 4.0) for all accounting courses taken previously.

In meeting the B average required in BUAD 285ab or BUAD 286ab, only one of the courses may be repeated. If the repeated course grade is higher, that grade will be considered in determining whether the student meets the B average, and the original course grade will be disregarded by the Leventhal School of Accounting in the administration of its grade point average requirements. See Repeated Course Work at USC for further restrictions on including grades in repeated courses in the overall university grade point average computation.

In computing grade point average prerequisites, BUAD 285ab or BUAD 286ab or BUAD 305x and BUAD 302T will be considered accounting courses.

Probation

When a student's cumulative accounting grade point average falls below 2.7, the student is placed on probation. If a student on probation does not regain a minimum accounting cumulative GPA of 2.7 after completing the next 12 semester hours in all courses (including accounting units) attempted within the university, that student will not be permitted to continue as an accounting major in the Leventhal School of Accounting. Exceptions to this policy may be granted only in unusual circumstances by the Academic Standards Committee of the Leventhal School of Accounting. Decisions of the Academic Standards Committee are final.

To be removed from probationary status, a student may elect to take another accounting course or courses for which prerequisites are met or to repeat an accounting course or courses in an attempt to earn a higher grade. Regardless of the course of action taken, all courses completed will be counted in computing the cumulative accounting grade point average.

A grade of "W" in an accounting course taken while on probation will not extend probation. The probation period ends at the end of that semester during which the student completes a cumulative total of 12 semester hours of courses in any subject(s) at the university. Under no conditions will the student be permitted more than two successive semesters, including the summer semester, to complete the 12 semester hours of courses.

Graduation Standard

Students must attain a minimum 2.7 cumulative accounting grade point average (A = 4.0) to graduate with a Bachelor of Science, Accounting degree.

USC Core Requirements

All USC undergraduates take the USC Core, which comprises the general education, the writing, and the diversity requirement. The general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. The general education program requires six courses in different categories. The writing program requires two courses: WRIT 140 and WRIT 340. The diversity requirement is met by passing any one course with the "m" designation. See page xx and page xx for more information. In addition, a total of 60 units of non-business course work is required for the B.S. Accounting degree.

Business Foundation Requirements

All students in the Leventhal School accounting undergraduate degree program take business foundation courses that focus on necessary analytic skills and theoretical knowledge in math, statistics, accounting and economics. Fundamental knowledge of the functional business disciplines and the strategic interplay among them completes the business core.

ACCOUNTING/BUSINESS FOUNDATION COURSES		UNITS
BUAD 285ab	Accounting Fundamentals, Financial and Managerial Accounting (4-2), or	
BUAD 286ab	Accounting Fundamentals, Managerial and Financial Accounting (4-2)	6
BUAD 302T**	Business Communication for Accountants	4
BUAD 304	Leading Organizations	4
BUAD 306	Business Finance	4
BUAD 307	Marketing Fundamentals	4
BUAD 310	Applied Business Statistics	4
BUAD 311T	Operations Management for Accounting Majors	4
BUAD 497	Strategic Management	4
ECON 351x	Microeconomics for Business	4
ECON 352x	Macroeconomics for Business	4

MATH 118x** Fundamental Principles of the Calculus, or
 MATH 125 Calculus I 4
**If an accounting student has already completed the course in a section not designated for accounting majors, he or she must check with an academic adviser in the Leventhal School of Accounting for advisement.*
***Placement into MATH 118x is contingent on successful completion of MATH 117 or obtaining an acceptable score on the math placement exam or AP calculus or IB mathematics exam.*

All prerequisites for business and all accounting and business courses must be taken for a letter grade.

A maximum of 24 units of undergraduate course work taken on a pass/no pass basis may be used toward the B.S., Accounting degree. No more than four units of credit (or one course) counting toward the general education categories may be taken on a pass/no pass basis. The writing course cannot be taken on a pass/no pass basis.

The Bachelor of Science, Accounting degree includes the following required accounting courses in addition to the accounting/business foundation courses listed above.

REQUIRED ACCOUNTING COURSES		UNITS
ACCT 370	External Financial Reporting Issues	4
ACCT 371	Introduction to Accounting Systems	4
ACCT 372	Internal Reporting Issues	2
ACCT 373	Introduction to Auditing and Assurance Services	2
ACCT 374	Introduction to Tax Issues	2
ACCT 377	Valuation for Financial Statement Purposes	2
ACCT 430	Accounting Ethics	4

ACCT 470	Advanced External Financial Reporting Issues	4
ACCT 473	Financial Statement Auditing, or	
ACCT 474	Tax Issues for Business	2

ELECTIVE COURSES UNITS

Choose one of the following courses:

ACCT 416	Financial Reporting and Analysis	2
ACCT 462	Detecting Fraudulent Financial Reporting	2
ACCT 463	Internal Audit	2
ACCT 471	Accounting Information Systems	2
ACCT 472	Managerial Accounting	2
ACCT 473*	Financial Statement Auditing	2
ACCT 474*	Tax Issues for Business	2
ACCT 475	Systems Security and Audit	2
ACCT 476	Performance Measurement Issues	2
ACCT 477	Intermediate Fair Value Issues in Accounting	2
ACCT 478	Accounting Systems Design	4
ACCT 479	Accounting Systems Development	4
ACCT 493	Honors Research Seminar	4

**If not already completed as a required course*

Accounting Minor

A minor in accounting is available to students in all schools and departments except the Marshall School of Business. The minor provides the opportunity for non-business majors to gain an understanding, from the perspective of the user of accounting information, of how accounting is used in the business world. To be approved for the accounting minor, students must have completed a minimum of 32 units of college-level courses and attained a minimum GPA of 2.75. Successful

completion of the 22 units for the accounting minor requires a minimum GPA of 2.0 in the following courses:

COURSE REQUIREMENTS		UNITS
ACCT 410x	Foundations of Accounting	4
ACCT 415x	Intermediate Financial Accounting for Non-Accounting Majors	4
BUAD 200x*	Economic Foundations for Business	2
BUAD 215x	Foundations of Business Finance	4
Choose two of the following courses:		
ACCT 416**	Financial Reporting and Analysis	2
ACCT 417**	Advanced Financial Accounting for Non-Majors	2
ACCT 418x	Accounting for Management Decisions	2
ACCT 419x	Understanding Accounting Information Systems	2
ACCT 420x	Understanding Income Tax	2
ACCT 462**	Detecting Fraudulent Financial Reporting	2
ACCT 499	Special Topics	2

Choose one of the following courses:

BUAD 302	Communication Strategy in Business	4
BUAD 304	Leading Organizations	4
BUAD 307	Marketing Fundamentals	4
BUAD 311	Operations Management	4
FBE 400x	Introduction to Real Estate Finance and Development	4
FBE 403	Legal Environment of Business	4

**Students who have taken ECON 203 or ECON 351 and ECON 205 or ECON 352 will be waived out of BUAD 200x.*

***Prerequisite ACCT 415x.*

Graduate Degrees

The USC Leventhal School of Accounting offers two graduate degrees: the Master of Accounting (M.Acc.) and the Master of Business Taxation (MBT). The M.Acc. program provides an integrated curriculum designed to prepare graduates for careers in professional accounting, public accounting, industry and government. Through its integrated curriculum, students have the opportunity to study accounting in greater depth than in undergraduate accounting programs or MBA programs with concentrations in accounting. The MBT program provides in-depth specialization in taxation to prepare the student for a successful career as a tax professional.

The Leventhal School of Accounting also offers the dual Juris Doctor/Master of Business Taxation (J.D./MBT) degree program in conjunction with the USC Gould School of Law. The combination of broad legal education with detailed tax specialization prepares graduates for fast-track careers in law and accounting tax practices.

The Marshall School of Business offers the Doctor of Philosophy (Ph.D.) degree in conjunction with the Graduate School. A student electing to major in accounting may design a research program that emphasizes auditing, financial accounting, information systems,

management accounting or taxation. For more information on the doctoral program, see the Marshall School of Business section of this catalogue, page xx, or contact the doctoral office at (213) 740-0670 or the director of doctoral studies in accounting at (213) 740-5025.

Admission to Master's Programs

The Leventhal School of Accounting seeks individuals who have the potential for outstanding achievement in accounting or taxation. The Admissions Committee takes into consideration the candidate's academic record, the Graduate Management Admission Test (GMAT), the professional resume, recommendation letters and written essays. Candidates are reviewed on the merits of their application and the merits of the applicant pool for the semester in which they seek admission.

Applicants to the full-time programs are not required to have any previous work experience. Applicants to the part-time MBT program are required to have a minimum of one year full-time professional experience in tax after receiving an undergraduate degree.

Application to the Programs

To ensure a place in a program and adequate time to receive an admission decision, it is important to submit completed application materials to the Leventhal School of Accounting Master's Programs Admissions Office through the online application system well in advance of the term in which the applicant wishes to register. If work is still in progress, the applicant should state specifically what courses are in progress and an estimated completion date.

For all programs, an admission decision cannot be made without the following: (1) a completed USC Leventhal School of Accounting online graduate application (available at www.marshall.usc.edu/leventhal/grad); (2) an application fee of \$85; (3) one official transcript from the registrar of each college or university attended (undergraduate and/or postgraduate) whether course work was completed or not. If all college or postgraduate work has not been completed, transcripts must be requested when work in progress is completed and degree is earned; (4) two letters of recommendation from faculty members or employers; (5) a written essay, not to exceed two pages, describing your career plans and

how a M.Acc. or MBT degree will help you achieve these plans; (6) a professional resume summarizing your background; (7) an official Graduate Management Admission Test (GMAT) score report or, for J.D./MBT applicants or attorneys, an official Law School Admission Test (LSAT) score report; and (8) an interview.

Interviews are required for all qualified applicants to the full-time M.Acc. and MBT programs. If you live outside of the U.S., telephone interviews are required. The graduate admissions adviser will contact applicants to discuss scheduling an interview after an application is complete.

Following the requirements noted above, applicants for the J.D./MBT dual degree program should apply to the Leventhal School of Accounting for admission to the MBT program in the second semester of their first year in the USC Gould School of Law. In addition, current Law School transcripts and a "letter in good standing" from the registrar of the Law School must be submitted as part of the application. The same Leventhal School of Accounting admission criteria apply to the MBT portion of the J.D./MBT program.

International Students

In addition to the application process mentioned above, international students must submit results from the Test of English as a Foreign Language (TOEFL), the International English Language Testing System (IELTS), or from the Pearson Test of English Academic (PTE Academic). A letter of financial support is also required. Transcripts from international universities must be submitted in the original language, as well as in English. The transcripts may have either percentile grades or letter grades.

Progressive Degree Programs: Bachelor of Science, Accounting/Master of Accounting and Bachelor of Science, Accounting/Master of Business Taxation

The Leventhal School of Accounting offers students who have demonstrated exceptional academic success in undergraduate accounting the opportunity to earn both the Bachelor of Science, Accounting, and a master's degree in five years. Applicants to the program must have completed 64 units of course work and must submit their applications before completing 96 units of course work. AP units, IB units and course work taken prior to high school graduation are excluded from the unit count. Applicants to the progressive degree program in Accounting may not have to submit GMAT scores.

The application for admission to a progressive degree program must be accompanied by an approved course plan proposal and letters of recommendation from two USC faculty members in accounting. The requirements for both the B.S. and the master's degree must be satisfied. For more information on progressive degree programs, see page xx.

Application Deadlines

M.Acc.

Full-time *only*:

Jan. 10 — All international applicants

March 31 — U.S. citizens/permanent residents

MBT

Full-time:

Jan. 10 — All international applicants

March 31 — U.S. citizens/permanent residents

Working Professionals program (part-time):

Nov. 1 — All applicants for the spring semester

June 1 — All applicants for the fall semester

We recommend that applicants to the full-time master's programs who wish to be considered for scholarship submit *all* application materials by January 10. For applications received after this date, financial awards will be given only if funds are available.

Application decisions will be made on a rolling admission basis until the programs are filled. Applicants are urged to file a completed application as early as possible. Applications that arrive after the regular deadline will be considered on a space available basis. The summer program is limited to a maximum of 75 students, so applicants for this part of the program should submit applications as early as possible.

Change of Degree Program

Students currently enrolled in a USC degree program who wish to change their degree status to the Master of Accounting or the Master of Business Taxation programs must submit a formal application to the Leventhal School of Accounting.

Limited Status

The Leventhal School of Accounting does not permit students to take classes prior to receipt of completed application materials and a positive recommendation by the Admissions Committee. Students completing a program at another accredited university outside of Los Angeles may take courses in the Leventhal School of Accounting. They must provide a letter from their dean stating that the requested classes will be accepted for transfer to their degree program.

Retention of Files

Files for applicants who (1) were not admitted, (2) did not complete their files or (3) declined admission will be purged 12 months after the semester for which they applied. Files for graduated students will be purged after five years.

Residence Requirements

Subject to approval of the Leventhal School of Accounting, the maximum number of transfer credits that may be applied toward the master's degree is three units. To be applied to the degree, transfer work must have been completed within five years of admission to the master's program. Graduate transfer credit will not be granted for course work taken elsewhere after a student has been admitted and enrolled at USC. Credit will only be allowed for courses (1) from an AACSB-accredited graduate school, (2) of a quality of at least 3.0 on a 4.0 grading scale, (3) constituting a fair and reasonable equivalent to current USC course work at the graduate level, and (4) fitting into the logical program for the degree. Transfer course work is applied as credit (CR) toward the degree and is not included in the calculation of a minimum grade point average for graduation.

Duplication of Courses

Ordinarily, courses may not be repeated for credit. For courses that may be repeated for credit, the maximum amount of credit is indicated after the unit value.

Waivers

Subject waiver of required courses may be granted to students based upon prior academic work. All waived courses must be replaced with approved electives.

Students should carefully read their program evaluation form to know what electives must be taken if they are granted subject waivers. To be granted a subject waiver in a particular field, the student must have (1) completed at least two relevant courses in the field at the upper division or graduate level, (2) earned a grade of B or better, and (3) completed the courses no more than five years before entering the master's program at USC from an AACSB accredited business school (or equivalent economics department).

Further information regarding the waiver policy in the Marshall School of Business may be obtained from USC Leventhal Graduate Programs, Accounting 101, (213) 740-4838, macc.mbt@marshall.usc.edu.

Master of Accounting

The Master of Accounting program (M.Acc.) prepares graduates for careers in public accounting, industry and government. The program offers students technical and conceptual knowledge, professional development, research and lifelong learning, ethical and professional standards and globalization and diversity. For details on these student learning outcomes, see the program Website at marshall.usc.edu/macc.

The program employs a rigorous case analysis approach that requires students to exercise their analytical abilities and develop both teamwork and professional communication skills.

Application

An undergraduate accounting or business major is not necessary, nor is work experience a requirement. The program enrolls students in the summer or fall based on their academic backgrounds. For application information visit marshall.usc.edu/macc/admissions.

Program Requirements

The Leventhal School of Accounting Master's Program Office evaluates the academic background of each admitted student to determine the courses required to complete the program. Typically, a student with an undergraduate degree in accounting will complete the 30 unit program. A student with an undergraduate degree in any other subject usually needs preparatory course work totaling 15–18 additional units.

Prerequisite Course Work

Each summer the Leventhal School of Accounting offers an eight-week, 40 hours-per-week course to students who have not completed undergraduate degrees or other extensive course work in accounting. ACCT 525x Intensive Accounting Principles and Practices (15 units) must be completed successfully prior to beginning the core program.

If students have not taken a finance course as part of their undergraduate degree, they will also be required to take GSBA 548 Corporate Finance (3 units) prior to or during the program.

Degree Requirements**CORE PROGRAM COURSEWORK (16.5 UNITS)**

		UNITS
ACCT 528	Fair Value Accounting: GAAP, IFRS and Emerging Issues	1.5
ACCT 530	Ethics for Professional Accountants	3
ACCT 585	Professional Responsibilities in Accounting	3

At least one from the following (to be determined by previous course work)

ACCT 546	Auditing and Assurance Services	3
ACCT 557	Advanced Financial Statement Auditing Topics	3

At least one from the following (to be determined by previous course work)

ACCT 547*	Enterprise Information Systems	3
ACCT 549	Advanced Enterprise Systems and Technologies	3

At least one from the following (to be determined by previous course work)

GSBA 523T**	Communication for Accounting and Tax Professionals or	
BUCO 503	Advanced Managerial Communication	3
BUCO 533	Managing Communication in Organizations	3

ELECTIVE COURSE WORK (13.5 UNITS)

Select a minimum of 10.5 units of ACCT 5xx electives

Select a maximum of 6 units of Marshall (BAEP, BUCO, GSBA, FBE, IOM, MKT, MOR) 500-level electives.

Master of Business Taxation

Understanding taxation is critical to every business decision and many personal decisions as well. Whether you are preparing for a career as a tax professional in public accounting, industry, government or the investment arena or starting your own business, tax planning must be done. Because of the complexity of the tax law and its pervasive influence, people facing tax decisions routinely call on tax professionals for advice in planning and structuring their affairs in order to comply with the law and to ensure economic good sense.

The Master of Business Taxation (MBT) program is designed to develop the skills and expertise professionals need to assist individuals and firms trying to cope with myriad tax legislation and regulation at both the federal and local levels. The program offers students: 1) technical and conceptual knowledge; 2) professional development; 3) research and lifelong learning; 4) ethical and professional standards; and 5) globalization and diversity. For details on these student learning outcomes, see the program Website at marshall.usc.edu/mbt/academics.

Application

An undergraduate accounting or business major is not necessary, nor is work experience a requirement. The

program enrolls students in the summer or fall based on their academic backgrounds. For application information visit marshall.usc.edu/mbt/admissions.

Program Requirements

The Leventhal School of Accounting Master's Program Office evaluates the academic background of each admitted student to determine the courses required to complete the program. Typically, a student with an undergraduate degree in accounting will complete the 30 unit program. A student with an undergraduate degree in any other subject usually needs preparatory course work totaling 15–18 additional units.

Prerequisite Course Work

Each summer the Leventhal School of Accounting offers an eight-week, 40 hours-per-week course to students who have not completed undergraduate degrees or other extensive course work in accounting. ACCT 525x Intensive Accounting Principles and Practices (15 units) must be completed successfully prior to beginning the core program.

If students have not taken a finance course as part of their undergraduate degree, they will also be required to take GSBA 548 Corporate Finance (3 units) prior to or during the program.

Degree Requirements**CORE PROGRAM (18 UNITS)**

		UNITS
ACCT 530	Ethics for Professional Accountants	3
ACCT 550T	Tax Research and Professional Responsibilities	3
ACCT 551T	Taxation of Partnerships and S-Corps	3
ACCT 560T	Tax Theory and Ethics	3
ACCT 561T	Income Tax of Corporations and Their Shareholders	3

At least one from the following (to be determined by previous course work)

GSBA 523T*	Communication for Accounting and Tax Professionals, or	
BUCO 503	Advanced Managerial Communication, or	
BUCO 533	Managing Communication in Organizations	3

ELECTIVE COURSE WORK (12 UNITS)

Select at least 9 units from the following list. Three additional units may be selected from this list or any Marshall (BAEP, BUCO, FBE, GSBA, IOM, MKT, MOR) 500-level elective.

ACCT 563T	Federal Estate and Gift Taxes	3
ACCT 567T	Taxation of Transactions in Property	3
ACCT 568T	Taxation of Foreign Business Operations	3
ACCT 569T	Advanced Partnership Taxation	3
ACCT 570T	State and Local Tax Concepts	3
ACCT 571T	Taxation of Individuals	3
ACCT 573T	Federal Tax Procedure	3
ACCT 576T	Tax Consolidations	3
ACCT 578T	Advanced Corporate Taxation	3
ACCT 580T	Tax Accounting Methods	3

ACCT 582*	Accounting for Mergers and Acquisitions	3
ACCT 583	Income Tax Accounting and Auditing	3
ACCT 584	Family Wealth Preservation	3
ACCT 586	Financial Reporting Topics and Analysis for Tax Professionals	3

* Prerequisite: GSBA 510

Juris Doctor/Master of Business Taxation**Dual Degree Program**

The Leventhal School of Accounting, in conjunction with the USC Gould School of Law, offers a program leading to the dual degree of Juris Doctor/Master of Business Taxation (J.D./MBT). This program permits a student to pursue a specialized program in taxation through courses in the Marshall School of Business, the Leventhal School of Accounting and the USC Gould School of Law. The MBT portion of the program leading to the J.D./MBT is 45 units, including 10 units of law school courses that are recognized by the Leventhal School of Accounting toward the J.D./MBT; a maximum of 33–36 units of Marshall School of Business and Leventhal School of Accounting courses are recognized by the law school toward the J.D./MBT. Students must complete 76 law units to satisfy the J.D. portion of the dual degree.

Unit Requirements

The total number of units required for the MBT portion of the J.D./MBT program will vary, depending on the educational background of the individual student, but all students are required to complete a minimum of 30 units of business courses and maintain an overall grade point average of 3.0 for these courses. A total of 15 units of taxation, accounting and business courses listed below in Group I may be waived by the Leventhal School of Accounting if the student has completed substantial academic work of high quality from an International Association for Management Education-accredited school.

The courses in Group II are required of all J.D./MBT students. Students must choose a minimum of six units from Group III courses and a minimum of 12 units from Group IV courses. In addition, a student may choose three elective units from Group V courses or another course approved in advance by the director of the MBT program.

First Year

Required USC Gould School of Law courses (33 units)

Second, Third and Fourth Years

Forty-three units of law courses, including the law courses listed below, and 33–36 units of Marshall School of Business and Leventhal School of Accounting courses as follows:

GROUP I COURSES (15 UNITS)

		UNITS
ACCT 544	Introduction to Strategic Tax Planning	3
GSBA 510	Accounting Concepts and Financial Reporting	3
GSBA 511	Managerial Economics	3

GSBA 518	Accounting Control Systems, or	
ACCT 572	Corporate Accounting and Reporting	3
GSBA 548	Corporate Finance	3

GROUP II COURSES* (10 UNITS) UNITS

ACCT 550T	Tax Research and Professional Responsibilities	3
LAW 600	Taxation	3 or 4
ACCT 561T	Income Taxation of Corporations and Their Shareholders, or	
LAW 644	Corporate Tax, or	2 or 3
LAW 868	Business Enterprise Taxation	2-4

GROUP III COURSES* (A MINIMUM OF 6 UNITS) UNITS

LAW 644	Corporate Tax	2 or 3
LAW 717	Estate Planning	3
LAW 842	Partnership Taxation	2 or 3

*Students should seek counseling at the law school regarding all LAW courses.

GROUP IV COURSES (A MINIMUM OF 12 UNITS) UNITS

ACCT 551T	Taxation of Partnerships and S-Corps	3
ACCT 563T	Federal Estate and Gift Taxes	3
ACCT 567T	Taxation of Transactions in Property	3
ACCT 568T	Taxation of Foreign Business Operations	3
ACCT 569T	Advanced Partnership Taxation	3
ACCT 570T	State and Local Tax Concepts	3
ACCT 571T	Taxation of Individuals	3
ACCT 573T	Federal Tax Procedure	3
ACCT 575T	Taxation of Financial Markets	3
ACCT 576T	Tax Consolidations	3
ACCT 577T	Compensation	3
ACCT 578T	Advanced Corporate Taxation	3
ACCT 579T	Advanced International Taxation	3
ACCT 580T	Tax Accounting Methods	3

GROUP V COURSES (0-3 UNITS) UNITS

ACCT 572	Corporate Accounting and Reporting	3
ACCT 574	Accounting in the Global Business Environment	3
ACCT 581	Financial Statement Analysis	3
ACCT 585	Professional Responsibilities in Accounting	3
BUCO 533	Managing Communication in Organizations	3
FBE 527	Entrepreneurial Finance: Financial Management for Developing Firms	3
FBE 555	Investment Analysis and Portfolio Management	3
FBE 588	Advanced Real Estate Law	3
FBE 589	Mortgages and Mortgage-Backed Securities and Markets	3
FBE 591	Real Estate Finance and Investment	3
MOR 542	Strategic Issues for Global Business	3

Course Duplication and Prerequisites

Credit in a law course precludes credit in the corresponding business course, and credit in a business course precludes credit in the corresponding law course.

In addition, where credit in one program's course precludes credit in the other program's corresponding course, the course in which credit is received will be deemed to have met the prerequisite for all subsequent courses in either school.

Corresponding Courses

ACCT 561T and LAW 644

ACCT 551T and LAW 842

Note: LAW 600 Taxation must be taken in place of ACCT 560T to meet the J.D./MBT requirement. LAW 644 Corporate Tax may be taken in place of ACCT 561T to meet the MBT course requirements.

Courses of Instruction
ACCOUNTING (ACCT)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

ACCT 370 External Financial Reporting Issues (4, FaSp) Understanding of decision-making, problem solving, and research skills as a supplement to financial accounting knowledge for accounting professionals. (Duplicates credit in former ACCT 370ab.) *Prerequisite:* BUAD 281 or BUAD 285b or BUAD 286b or BUAD 305.

ACCT 371 Introduction to Accounting Systems (4, FaSp) Understanding of technology and controls needed to capture data used by professionals in financial and managerial accounting, auditing and taxation. (Duplicates credit in former ACCT 371ab.) *Prerequisite:* BUAD 281 or BUAD 285b or BUAD 286b or BUAD 305.

ACCT 372 Internal Reporting Issues (2, FaSp) Understanding of decision-making, problem solving, and research skills as a supplement to managerial accounting knowledge for accounting professionals. *Prerequisite:* BUAD 281 or BUAD 285b or BUAD 286b or BUAD 305.

ACCT 373 Introduction to Auditing and Assurance Services (2, FaSp) Exploration of the requisite skills and knowledge needed to offer services in assurance, attestation or auditing engagements. *Prerequisite:* ACCT 370 and ACCT 371.

ACCT 374 Introduction to Tax Issues (2, FaSp) Basic tax principles, introduction to U.S. federal, state and local tax systems, income and expense definitions, property transactions, and fundamentals of individual taxation. *Prerequisite:* BUAD 281 or BUAD 285b or BUAD 286b or BUAD 305.

ACCT 377 Valuation for Financial Statement Purposes (2, FaSp) Explores Accounting Standards Codification (ASC) 820 "Fair Value Measurements and Disclosures" and reviews the historical background of U.S. GAAP fair value guidance. *Prerequisite:* ACCT 370; *corequisite:* BUAD 306.

ACCT 390 Special Problems (1-4, FaSpSm) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

ACCT 410x Foundations of Accounting (4, FaSpSm) Non-technical presentation of accounting for users of accounting information; introduction to financial and managerial accounting. Not open to students with course credits in accounting. Not available for unit or course credit toward a degree in Accounting or Business Administration.

ACCT 415x Intermediate Financial Accounting for Non-Accounting Majors (4, FaSp) In-depth study of balance sheet, income statement, and cash flow statement issued from the perspective of a user (not preparer) of corporate financial reports. Not open to accounting majors. (Duplicates credit in former ACCT 411x and ACCT 412x.) *Prerequisite:* ACCT 410x or BUAD 281 or BUAD 285b or BUAD 286b or BUAD 305.

ACCT 416 Financial Reporting and Analysis (2, FaSp) Examination of the role of financial statement analysis in the prediction of a firm's future financial performance. *Prerequisite:* BUAD 215 or BUAD 306; ACCT 370 or ACCT 415.

ACCT 417 Advanced Financial Accounting for Non-Majors (2, FaSp) Developing capabilities to identify, articulate and interpret financial statements reflecting complex merger and acquisition activities, with a focus on financial analysis and investment banking. Not available for degree credit to accounting majors. Not open to accounting majors. *Prerequisite:* BUAD 215x or BUAD 306; ACCT 370 or ACCT 415x.

ACCT 418x Accounting for Management Decisions (2, FaSp) Understanding of decision-making uses of accounting information: cost systems, planning and budgeting, and measuring and rewarding performance. Not available for credit to accounting or business majors. Open to accounting minors only. *Prerequisite:* ACCT 410x.

ACCT 419x Understanding Accounting Information Systems (2, FaSp) Understanding of accounting systems focusing on how these systems are designed, selected, implemented, used and managed. Not available for credit to accounting or business majors. Open to accounting minors only. *Prerequisite:* ACCT 410x.

ACCT 420x Understanding Income Tax (2, Sp) Understanding of the U.S. federal income tax system. Topics include income and expense definitions, property transactions, and tax computation for individuals and business entities. Not available for credit to accounting majors. Open to accounting minors only. *Prerequisite:* ACCT 410x or BUAD 281 or BUAD 285b or BUAD 286b or BUAD 305.

ACCT 430 Accounting Ethics (4, FaSp) Theoretical knowledge and practical application accountants need to identify ethical issues and reconcile conflicts among competing stakeholders' interests in all major areas of accounting practice.

ACCT 462 Detecting Fraudulent Financial Reporting (2, FaSp) Understanding/identifying methods of fraudulent financial reporting, and signals that financial statements were fictitiously prepared; major frameworks for analyzing ethical dilemmas; reforms in corporate reporting environment. *Prerequisite:* ACCT 370 or ACCT 415x.

ACCT 463 Internal Audit (2, FaSp) Examination of internal audit/auditors and their relationship to management, the investors, the regulators, and the external auditors. *Prerequisite:* ACCT 370, ACCT 373.

ACCT 470 Advanced External Financial Reporting Issues (4, FaSp) Develop capabilities to identify and resolve advanced external financial reporting challenges, focusing primarily on operating, financing, and investing activities of business enterprises. (Duplicates credit in former ACCT 470ab.) *Prerequisite:* ACCT 370; *corequisite:* ACCT 377.

ACCT 471 Accounting Information Systems (2, FaSp) Issues related to the design, control, and implementation of accounting information systems. *Prerequisite:* ACCT 371.

ACCT 472 Managerial Accounting (2, FaSp) Understanding of systems providing cost information useful in management decision-making and problem solving. *Prerequisite:* ACCT 372.

ACCT 473 Financial Statement Auditing (2, FaSp) Course builds on the background developed in ACCT 373, specifically the process used by external auditors to conduct financial statement audits. *Prerequisite:* ACCT 373.

ACCT 474 Tax Issues for Business (2, FaSp) Capabilities to identify and articulate tax issues related to a business entity's life: formation, investing, financing and operations, and change of form. (Duplicates credit in former ACCT 451.) *Prerequisite:* ACCT 374.

ACCT 475 Systems Security and Audit (2, FaSp) Issues related to the security, control, and auditing of accounting information systems. *Prerequisite:* ACCT 371.

ACCT 476 Performance Measurement Issues (2, FaSp) Introduction to understanding how management control systems can enhance achievement of the organization's objectives and strategies. *Prerequisite:* ACCT 410x or BUAD 281 or BUAD 285b or BUAD 286b or BUAD 305.

ACCT 477 Intermediate Fair Value Issues in Accounting (2, FaSp) Develops the ability to identify and understand new areas of emerging guidance involving fair value issues and to recognize and demonstrate appropriate application of methodologies. *Prerequisite:* ACCT 377.

ACCT 478 Accounting Systems Design (4, FaSp) Explores the design of accounting systems. Introduction to tools and techniques for analyzing and designing accounting systems with an emphasis on system controls and reporting. *Prerequisite:* ACCT 371.

ACCT 479 Accounting Systems Development (4, FaSp) Examines the fundamentals of accounting systems development. Introduction to the concepts of implementation and support, with emphasis on system quality assurance, evaluation and attestation. (Duplicates credit in former ACCT 454.) *Prerequisite:* ACCT 478.

ACCT 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

ACCT 493 Honors Research Seminar (4, Sp) Provides the methodological tools to identify research problems, develop researchable hypotheses, apply appropriate methodologies, conduct research, derive meaningful conclusions from data, write a research proposal. Open only to accounting majors.

ACCT 494 Marshall Honors Research and Thesis (2-4, max 4, FaSpSm) Experience in conducting research and writing a thesis under supervision of a faculty adviser. Open only to Marshall Honors students who have completed ACCT 493 or BUAD 493. (Duplicates credit in BUAD 494.) Graded CR/NC. *Prerequisite:* ACCT 493 or BUAD 493.

ACCT 495 Accounting Internship: Work, Ethics and Communication (2, Sp) Provides insights and tools for the work environment specifically integrating technical, communication and ethical decision-making; bridging classroom learning and "real world" experience. Open only to accounting majors. Graded CR/NC. *Recommended preparation:* ACCT 370, BUAD 302T.

ACCT 499 Special Topics (2-4, max 8, Irregular) Examination of current literature relevant to the total and changing environment in which business operates.

ACCT 509 Concepts of Financial and Management Accounting (4, Fa) Introduction to the concepts of financial and managerial accounting. The course will provide coverage of key concepts needed by managers of businesses in order to communicate information important in decision-making. (Duplicates credit in GSBA 510, GSBA 518, GSBA 536.) Not open to business majors.

ACCT 525x Intensive Accounting Principles and Practices (15, Sm) Technical accounting theory and principles necessary for graduate work. Satisfies the prerequisite requirements for intermediate and advanced accounting, auditing, and tax. Credit toward degree limited to M.Acc. and MBT students. *Recommended preparation:* introductory accounting courses.

ACCT 526 Global Accounting Experience (1.5, Sp) Cross-border transactions in the global economy examining accounting, legal, and tax environments, economic and political systems, and cultural differences. Includes international travel to selected region.

ACCT 528 Fair Value Accounting: GAAP, IFRS and Emerging Issues (1.5, Fa) Case study approach to explore fair value issues in accounting; research and analysis of causes of valuation differences. Open only to business and accounting majors.

ACCT 530 Ethics for Professional Accountants (3, Sp) Provides the ethical grounding that accountants need to identify ethical issues and reconcile conflicts among competing stakeholder interests. Open only to graduate accounting students.

ACCT 535 Management Accounting and Control Systems (3, Fa) Decision-making, uses of management accounting information; cost system design; financial responsibility centers; planning and budgeting systems; performance measures and evaluation. Not open to MBA students. (Duplicates credit in GSBA 518.) *Prerequisite:* GSBA 510.

ACCT 536 Advanced Cost Analysis and Management Accounting (3, Sm) Analysis and design of systems that provide cost information useful in making strategic and operating decisions. Advantages and limitations of activity-based costing methods. *Prerequisite:* GSBA 518 or ACCT 535.

ACCT 537 Performance Measurement, Evaluation, and Incentives (3, FaSp) Financial responsibility centers, financial and nonfinancial performance measures, budgets and other targets, evaluation techniques and styles, incentives. Strategy implementation and execution. Corporate governance. Open only to business and accounting students. *Recommended preparation:* introductory managerial accounting course.

ACCT 543 Introduction to Tax (3) Tax issues arising during a business' life, including formation, financing, operating, expanding, and dissolving. Cross-border transactions and non-U.S. tax systems discussed.

ACCT 544 Introduction to Strategic Tax Planning (3, Fa) Principles of multijurisdictional business tax planning, using a conceptual framework, integrating finance, marketing and financial statement objectives. *Recommended preparation:* GSBA 518.

ACCT 546 Auditing and Assurance Services (3, FaSpSm) Concepts and principles governing independent professional services that provide assurance on the reliability and relevance of information, including financial statement information. Topics include demand and supply issues for these services, basic principles of evidence, risk assessment and testing. Open only to graduate business and accounting students. *Recommended preparation:* ACCT 525x.

ACCT 547 Enterprise Information Systems (3, Fa) Focuses on accounting enterprise database models and information technology required to support those systems. Includes analysis and design of interfunctional process flows through reengineering to exploit technology capabilities. Open only to graduate Accounting and Business students.

ACCT 548 Enterprise Systems: Design, Implementation, Security and Audit (3, FaSp) Exploration of a number of areas including the role systems play in organizations, the technology that supports these systems and issues relating to technology risk, system/application security and system review/audit. *Prerequisite:* ACCT 371 or ACCT 547.

ACCT 549 Advanced Enterprise Systems and Technologies (3, FaSp) Design, control and development of advanced enterprise systems, using reengineering, focusing on accounting and financial systems, using a wide range of emerging existing technologies. *Recommended preparation:* ACCT 547.

ACCT 550T Tax Research and Professional Responsibilities (3, Fa) Tax law research methods; interpreting statutes, cases and rulings; communicating research results; administration and professional responsibilities of tax practice. Open only to graduate business and accounting students. *Recommended preparation:* introductory tax course.

ACCT 551T Taxation of Partnerships and S-Corps (3, Fa) Federal taxation of flow-through entities, including: partnerships, S corporations, limited liability partnerships (LLPs) and limited liability companies (LLCs). Open only to Accounting, Business Taxation, and Law/Business Taxation students. *Recommended preparation:* ACCT 550T or ACCT 560T or LAW 600.

ACCT 552 Knowledge and Data Management (3, Sp) Managing knowledge using knowledge-based systems and contemporary knowledge management approaches (intranets) in order to enhance and facilitate decision making and manage accounting data and information in organizations. *Recommended preparation:* ACCT 547.

ACCT 553T Tax Policy and Strategic Tax Planning (3) Introduction to business taxes and their impact on management decisions. For prospective managers and business consultants, topics include discounted cash flow, financial accounting, and overall business impacts of taxes on decision making. *Recommended preparation:* GSBA 518.

ACCT 555 Enterprise Resource Planning Systems (2, FaSp) Focuses on many facets of enterprise resource planning systems, such as SAP, including implementation approaches, risks, reengineering, data models and other emerging issues. *Concurrent enrollment:* ITP 555; *recommended preparation:* ACCT 547 or ACCT 549.

ACCT 557 Advanced Financial Statement Auditing Topics (3, Sp) Advanced coverage of topics in financial statement auditing including market effects of auditing, auditor litigation and client acceptance, errors and fraud, analytical procedures, and going-concern assessment. *Prerequisite:* ACCT 525X.

ACCT 558 Advanced Accounting Valuation (1.5, Sp) Explores complex valuation issues arising in financial reporting and the related professional standards and guidance. *Prerequisite:* ACCT 528.

ACCT 559 Strategy and Operations Through CFO Lens (3, Sp) Examination of strategic objectives and operations within specific industries and companies. Chief Financial Officers present how they view the business as a whole and measure performance effectively. Open only to accounting and business majors.

ACCT 560T Tax Theory and Ethics (3, FaSpSm) Taxation and its relationship to business and investment decisions; the effects of taxation on business organization, capital structure, policies, operation, and expansion. Recommended preparation: introductory tax course. Open only to graduate business and accounting students.

ACCT 561T Income Tax of Corporations and Their Shareholders (3, FaSm) Concepts and principles governing the taxation of corporations and their shareholders; the effect of taxes on corporate formation, capital structure, distributions, and liquidations. Open only to Accounting, Business Taxation and Law/Business Taxation students. *Recommended preparation:* ACCT 550T or ACCT 560T or LAW 600.

ACCT 562 Methods and Motivations of Financial Reporting Fraud (1.5, Sp) Discover and analyze signals of major and frequently committed methods of fraudulent financial reporting; explore current reforms in financial reporting, auditing, and corporate governance. Open only to graduate accounting students. Recommended preparation: graduate-level financial accounting course.

ACCT 563T Federal Estate and Gift Taxes (3, Sp) Taxation of decedents' estates and lifetime gifts; valuation of property subject to estate and gift taxes. *Prerequisite:* ACCT 550T; ACCT 560T or LAW 600.

ACCT 567T Taxation of Transactions in Property (3, Fa) Taxation of gains and losses from sales, exchanges and other transactions involving property, especially real estate; tax planning. *Prerequisite:* ACCT 550T; ACCT 560T or LAW 600.

ACCT 568T Taxation of Foreign Business Operations (3, Sp) Taxation of foreign income of U.S. citizens and corporations and of U.S. source income of foreign persons and corporations; planning for organization of foreign operations under the tax laws. *Prerequisite:* ACCT 561T.

ACCT 569T Advanced Partnership Taxation (3, Sp) Advanced tax concepts involving partnerships and limited liability companies, designed to produce a level of expertise in Subchapter K of the Internal Revenue Code. *Prerequisite:* ACCT 551T.

ACCT 570T State and Local Tax Concepts (3) State income taxes; property tax; other state and local taxes; the effect of state and local taxes on multistate operations. *Prerequisite:* ACCT 550T; ACCT 560T or LAW 600.

ACCT 571T Taxation of Individuals (3, Sp) Application of tax law in areas of compensation planning, investment planning, tax shelters, and current developments relating to the individual taxpayer. *Prerequisite:* ACCT 550T; ACCT 560T or LAW 600.

ACCT 572 Corporate Accounting and Reporting (3, FaSpSm) A study of financial reporting and disclosure issues with an emphasis on the use of corporate financial statements and their accompanying footnotes. Not open to students with credit in equivalent subjects. *Prerequisite:* GSBA 510.

ACCT 573T Federal Tax Procedure (3, Sm) Tax reporting and collection procedures; administrative and judicial procedures governing tax controversies; the rights and obligations of the taxpayer. *Prerequisite:* ACCT 550T; ACCT 560T or LAW 600.

ACCT 574 Accounting in the Global Business Environment (3, Fa) Study of national and international accounting and business issues; global capital market changes; international accounting and business topics; cases and studies of specific business entities and countries. *Prerequisite:* GSBA 510 or GSBA 518 or GSBA 536.

ACCT 575T Taxation of Financial Markets (3, Sm) Taxation of financial market products with focus on derivative products. Basics of tax forwards, futures, options, swaps, collars and floor. Time value of money considerations. *Prerequisite:* ACCT 561T.

ACCT 576T Tax Consolidations (3, Sp) Concepts and principles of taxation of companies operating as consolidated groups. *Prerequisite:* ACCT 550T and ACCT 561T.

ACCT 577T Compensation (3) Concepts of taxation of employers and employees from various forms of compensation, including pension plans, profit sharing plans, stock ownership plans, and deferred compensation arrangements. *Prerequisite:* ACCT 550T and ACCT 560T.

ACCT 578T Advanced Corporate Taxation (3, FaSp) Analysis of corporate divisions and reorganizations, carryovers, and other advanced topics in corporate taxation. *Prerequisite:* ACCT 561T.

ACCT 579T Advanced International Taxation (3) Analysis of tax treaties, foreign currency transactions, international licensing, reorganization of foreign corporations, and other current topics as the law changes. *Prerequisite:* ACCT 568T.

ACCT 580T Tax Accounting Methods (3) Concepts governing timing of recognition of income and deductions for income tax purposes. Covers differences between GAAP and income tax accounting for all taxpayers. *Recommended preparation:* introductory tax course.

ACCT 581 Financial Statement Analysis (3, SpSm) Analysis of corporate financial reports from a decision-maker's perspective. This course is case-and-applications-oriented. Applications include credit analysis, equity valuation, and financial distress. *Prerequisite:* GSBA 510.

ACCT 582 Accounting for Mergers and Acquisitions (3, Fa) Theoretical and practical problems in accounting for business combinations: purchase and pooling-of-interests accounting; consolidated financial statements; income tax considerations; International Accounting Standards. *Prerequisite:* GSBA 510.

ACCT 583 Income Tax Accounting and Auditing (3, FaSpSm) Examination of FAS 109 and roles of auditors, tax professionals and corporate financial personnel in preparing, analyzing and reviewing accrual of income taxes. Open only to graduate business and accounting students. Recommended preparation: equivalent of intermediate accounting and introductory tax course.

ACCT 584 Family Wealth Preservation (3, Sp) Analysis of transfer of property during lifetime or at death from a tax saving perspective.

ACCT 585 Professional Responsibilities in Accounting (3, Fa) A case study approach to the integration of accounting and auditing knowledge; research, communication, and interpersonal skills developed through extensive written and presentation requirements. Open only to graduate business and accounting students. Recommended preparation: ACCT 572.

ACCT 586 Financial Reporting Topics and Analysis for Tax Professionals (3, Sm) Explores the technical financial accounting skills needed for an entry-level tax professional with emphasis on an understanding of financial statements and accounting for income taxes. Exposure to the preparation of corporate tax returns with the integration to the financial reporting of a corporation. *Recommended preparation:* undergraduate financial accounting or accounting class for lawyers.

ACCT 587 Forensic Accounting (3) Role of the accountant in litigation matters. Identification and exploration of the analytical and communication tools necessary to be an effective forensic accountant. *Prerequisite:* ACCT 572.

ACCT 588 Analysis and Implications of SEC Registration and Reporting (3, Sp) Legal, institutional, and economic implications of being a U.S. public company. The Securities and Exchange Commission and its influence on investors, management, underwriters, and accountants. *Recommended preparation:* ACCT 572.

ACCT 590 Directed Research (1-4) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the School of Accounting. Maximum units which may be applied to the degree to be determined by the school. Graded CR/NC.

ACCT 592 Field Research in Accounting (.5-4, max 12) Individual or team projects studying the business practices of an industry, company, government agency, country, geographic region, etc. Proposal, data collection, analyses, and written report. Open only to master's and doctoral students. Graded CR/NC. *Recommended preparation:* completion of M.Acc. or MBT course work.

ACCT 593 Independent Research in Accounting (.5-4, max 12, FaSpSm) Independent research beyond normal course offerings. Proposal, research and written report/paper required. Open only to master's and doctoral students. Graded CR/NC.

ACCT 595 Internship in Accounting (.5-2, max 9) Supervised on-the-job business experience in the field of Accounting. (Curricular Practical Training). Open only to master's students in Accounting, Business Research, Business Taxation and Law/Business Taxation. Graded CR/NC. *Recommended preparation:* Completion of required M.Acc. or MBT course work.

ACCT 596 Research Practicum in Accounting (.5-2, max 8, FaSpSm) Hands-on practical experience working with a Leventhal faculty member on an ongoing research project. Open only to master's and doctoral students. Graded CR/NC.

ACCT 597 Consulting Project in Accounting (.5-5, max 12, FaSp) Individual or team project solving real business problems for an existing business entity, domestic and/or international. Proposal, field research, analyses and oral and written presentations. Graded CR/NC.

ACCT 599 Special Topics (1, 1.5, 2, or 3, max 6, FaSpSm) Examination of current literature and research techniques in contemporary accounting areas including tax, auditing and international accounting.

ACCT 602 Survey of Judgment and Decision-Making Research in Accounting (3) Survey of major topics in judgment and decision-making research in accounting with coverage of both key research questions and frequently used methods.

ACCT 604 Survey of Management Accounting Research (3) Survey of major topics in accounting research with coverage of both key research questions and frequently used methods.

ACCT 605 Survey of Financial Reporting Research (3, Fa) Survey of major topics and methods in research on financial reporting with coverage of both key research questions and frequently used methods. Open only to business administration doctoral students.

ACCT 606 Survey of Tax Research (3) Survey of major topics and methods in research on taxation with coverage of both key research questions and frequently used methods.

ACCT 608 Positive Accounting Research (3) Survey of major topics related to positive accounting research with coverage of both key research questions and frequently used methods.

ACCT 610 Survey of Accounting Research (3, FaSp) Advanced seminar that surveys both seminal and cutting edge research in financial accounting, managerial accounting, accounting information systems, and tax accounting.

ACCT 611 Selected Topics in Accounting Research (1, max 4, FaSp) Advanced seminar to address issues/topics covered in accounting research forums presented by USC and visiting faculty.

ACCT 661ab Accounting Research Methodology (2-2) Advanced doctoral seminar concerned with review and critique of accounting research forum papers and with the preparation, presentation, and defense of research proposals and papers.

USC School of Cinematic Arts



The USC School of Cinematic Arts (SCA) is one of the nation's preeminent centers for the creation, study, research and development of film, television and interactive media. With nearly 200,000 square feet of facilities, the school confers degrees ranging from the bachelor's to the doctorate. SCA is composed of seven divisions: the John C. Hench Division of Animation and Digital Arts; the Bryan Singer Division of Critical Studies; Film and Television Production; Interactive Media and Games; Peter Stark Producing Program; Writing for Screen and Television; and Media Arts and Practice. The school also has two organized research units — the Institute for Multimedia Literacy and the Entertainment Technology Center.

Since its founding in 1929 as the first course of study in film at any college or university in the United States, USC's cinema program has consistently set academic and professional standards for excellence. In addition to offering the first undergraduate and doctoral degree programs in the field, the school has a record-breaking number of endowed chairs in the discipline; production facilities that rival industry counterparts and extraordinary faculty and staff.

Thanks to SCA's location in Los Angeles, students have access to the country's leading film, television, animation and video game producers; world-class literary and talent agencies; libraries and archives brimming with research materials; and alumni that support the school and the men and women in its academic body. The school is also home to USC's Trojan Vision television station.

The USC School of Cinematic Arts recognizes that a student can only truly excel in his or her chosen area of expertise after exposure to all elements of the art form. Consequently, there is an emphasis on cross-disciplinary course work that ensures writers get behind the camera; critical studies scholars edit footage; and production majors examine the canon from a rigorous academic perspective.

Administration

Elizabeth M. Daley, Ph.D., Dean

Office of Student Services
Brian Harke, Ed.D., Dean of Students
 (213) 740-8358
 Email: admission@cinema.usc.edu
studentaffairs@cinema.usc.edu
cinema.usc.edu

The Bryan Singer Division of Critical Studies
Akira Lippit, Division Chair
 School of Cinematic Arts 320
 (213) 740-3334*

Film and Television Production
Michael Taylor, Division Chair
 School of Cinematic Arts 434
 (213) 740-3317*

Interactive Media and Games
Tracy Fullerton, Division Chair
 School of Cinematic Arts 2nd Floor
 (213) 821-4472*
 FAX: (213) 821-2665

Writing for Screen and Television
Jack Epps Jr., Division Chair
 School of Cinematic Arts 335
 (213) 740-3303*
 FAX: (213) 740-8035

The Peter Stark Producing Program
Lawrence Turman, Division Chair
 School of Cinematic Arts 366
 (213) 740-3304
 FAX: (213) 745-6652

The John C. Hench Division of Animation and Digital Arts
Kathy Smith, Division Chair
 School of Cinematic Arts — Building B 210
 (213) 740-3986*
 FAX: (213) 740-5869

Media Arts and Practice
Holly Willis, Division Chair
 School of Cinematic Arts — Building I
 Email: imap@cinema.usc.edu

Institute for Multimedia Literacy
Holly Willis, Director of Academic Programs
 Email: iml@cinema.usc.edu
 *For information regarding admission, call (213) 740-8358.

Faculty
 Steven J. Ross/Time Warner Endowed Dean's Chair in Cinema-Television: Elizabeth M. Daley, Ph.D.

Dana and Albert "Cubby" Broccoli Endowed Chair in Producing: John Watson, M.A.

The Larry Auerbach Endowed Chair: Larry Auerbach

Electronic Arts Endowed Chair in Interactive Entertainment: Tracy Fullerton, MFA

Conrad Hall Chair in Cinematography and Color Timing: Judy Irola

Hugh M. Hefner Chair for the Study of American Film: Richard B. Jewell, Ph.D.

Alma and Alfred Hitchcock Chair for the Study of American Film: Drew Casper, Ph.D.

The Kortschak Family Endowed Division Chair in Film and Television Production: Michael Taylor, B.A.

Stephen K. Nenno Endowed Chair in Television Studies: Ellen Seiter, Ph.D.

Jack Oakie Chair in Comedy: Jack Epps Jr., B.A.

Mary Pickford Foundation Endowed Chair: Doe Mayer, M.A.

The Katherine and Frank Price Endowed Chair for the Study of Race and Popular Culture: Todd Boyd, Ph.D.

Kay Rose Endowed Chair in the Art of Sound and Dialogue Editing: Midge Costin, M.A.

Fran and Ray Stark Endowed Chair for the Study of American Film: Lawrence Turman, B.A.

Ken Wannberg Endowed Chair in Music Editing: Kenneth Hall, M.A.

Dino and Martha De Laurentiis Endowed Professorship: Mary Sweeney, M.A.

Presidential Professor of Cinematic Arts: George Lucas, B.A.

Judge Widney Professor: Robert Zemeckis

Provost Professor of Communication, Journalism, and Cinematic Arts: Henry Jenkins, Ph.D.

Distinguished Professor: Mark J. Harris, B.A.

Professors: Don Bohlinger, MFA; Todd Boyd, Ph.D.; Drew Casper, Ph.D.; Elizabeth M. Daley, Ph.D.; Scott Fisher, M.S.; Norman Hollyn, B.A.; Tomlinson Holman, B.S.; David Howard, MFA; Judy Irola; David Isaacs, B.A.; David James, Ph.D.; Henry Jenkins, Ph.D.; Richard Jewell, Ph.D.; Robert Jones; Jeremy Kagan, MFA; Barnett Kellman, Ph.D.; Akira Lippit, Ph.D.; Doe Mayer, M.A.; Christine Panushka, MFA; Michael Peyser, B.A.; Amanda Pope, B.A.; Michael Renov, Ph.D.; Howard A. Rodman, B.A.; Ellen Seiter, Ph.D.; Michael Taylor, B.A.; Lawrence Turman, B.A.; John Watson, M.A.

Associate Professors: Tom Abrams, MFA; Mark Bolas, M.S.; Ted Braun, MFA; Linda Brown, MFA; Midge Costin, M.A.; Pamela Douglas, M.A.; Jack Epps Jr., B.A.; Tracy Fullerton, MFA; Kenneth Hall, M.A.; Helaine Head, B.A.; Aniko Imre, Ph.D.; Priya Jaikumar, Ph.D.; Georgia Jeffries, B.A.; Kara Keeling, Ph.D.; Everett Lewis, MFA;

Tara McPherson, Ph.D.; Michael Patterson, BFA; Kathy Smith, B.A.; Sheila M. Sofian, MFA; Mary Sweeney, M.A.

Assistant Professors: Nitin Govil, Ph.D.; Andreas Kratky, MFA; Laura Isabel Serna, Ph.D.

Visiting Professors: Michael Fink, MFA; Alex McDowell, BFA

Visiting Associate Professors: Richard Lemarchand, B.A.; Dennis Wixon, Ph.D.

Professors of Practice: David Balkan, B.A.; Jed Dannenbaum, Ph.D.; Pablo Frascioni; Brenda Goodman; Tom Sito, BFA; Paul Wolff

Associate Professors of Practice: Steven Anderson, Ph.D.; Vicki Callahan, Ph.D.; Christopher Chomyn, MFA; Robert Gardner; Eric Hanson, B.A.; Virginia Kuhn, Ph.D.; Elisabeth Mann, MFA; Angelo Pacifici, B.Arch.; Mark Shepherd, MFA; Peter Sollett, BFA; Jason Squire, M.A.; Michael Uno, MFA; Douglas Vaughan, M.A.; Jennifer Warren; Shelly Wattenbarger, MFA; David Weber; Tristan Whitman, MFA

Assistant Professors of Practice: Peter Brinson, MFA; DJ Johnson, MFA; Robert Kositchek, BFA

Senior Lecturers/Lecturers: Steve Albrezzi; Don Hall; William Yahraus

Research Professor: Larry Auerbach

Research Associate Professors: Perry Hoberman, B.A.; Richard Weinberg, Ph.D.

Research Assistant Professors: Marientina Gotsis, MFA; Holly Willis, Ph.D.

Instructors of Cinema Practice: Richard Burton, B.A.; Reine-Claire Dousarkissian, M.A.; Evan Hughes, M.A.; Maks Naporowski, B.A.; Matthew Williams, MFA

Part-time Faculty: Ioan Allen; Kate Amend; Tom Anderson; Wendy Apple; Larissa Bank; David Baron; Deborah Baron; Sandra Berg; Alan Berger; Fred Bernstein; Danny Bilson; Bruce Block; Mitch Block; Peter Bonerz; Paul Bricault; Musa Brooker; Robert Brown; Robert Buerkle; Bobette Buster; Ed Callahan; Will Carter; Bonnie Chi; Frank Chindamo; Peter Chung; Martin Daniel; Paul DeMeo; Paul Demeyer; Dariush Derakhshani; Heather Desurvire; Vincent Diamante; Sharon Doyle; Peter Exline; David Fain; Ron Friedman; Eric Furie; Maureen Furniss; Elizabeth Gill-Brauer; Andrew Given; Scott Gorden; Janet Graham-Borba; Barbara Greyhosky; Chevon Hicks; John Hight; Joe Hoffman; Todd Hoffman; Michael Hoggan; William Huber; Joan Hyler; Angie Jones; Gabor Kalman; Peter Kang; Aaron Kaplan; Thomas Kemper; Darren Kiner; Randal Kleiser; Michael Kontopoulos; Jeffrey Korchek; Stu Krieger; Jon Kroll; Lucas Kuzma; Clifford Latimer; Ken LaZebnik; Lisa Leeman; Robert Levin; Andrew Licht; David Lloyd; John Mahoney; Laird Malamed; Leonard Maltin; Peter Marx; Frank McAdams; Denise McKenna; Bill Mechanic; David Milton; Jan Nagel; Robert Nashak; Rob Nederhorst; Noel Nosseck; Jim

O'Keeffe; Joseph Olin; Bob Osher; Rod Perth; Gary Randall; Candace Reckinger; Sandy Reisenbach; Brad Riddell; Vincent Robert; Howard Rosenberg; Noreen Stone; Jeffrey Stott; Mark Stratton; Danny Sussman;

Ella Taylor; John Underkoffler; Marcel Valcarce; Jon Wagner; Jordan Weisman; David Weitzner; William Whittington

Emeritus Professors: Ron Curfman, MFA; Trevor Greenwood, M.A.; Richard Harber, M.A.; Edward Kaufman, Ph.D.; Marsha Kinder, Ph.D.; K. Kenneth Miusa, M.A.; Woody Omens, M.A.; Morton Zarcoff, M.A.

Degree Programs

The USC School of Cinematic Arts offers professional and academic degree programs at the bachelor's, master's and doctoral levels.

Bachelor of Arts — Animation and Digital Arts

This program combines a broad liberal arts background with specialization in a profession. The degree is granted through the USC Dornsife College of Letters, Arts and Sciences in conjunction with the School of Cinematic Arts. The degree requires 128 units.

Bachelor of Arts, Cinematic Arts, Critical Studies

This degree is granted through the USC Dornsife College of Letters, Arts and Sciences in conjunction with the School of Cinematic Arts and requires 128 units.

Bachelor of Arts, Cinematic Arts, Film and Television Production

This degree is a two-year program for transfer students. The B.A. is granted through the USC Dornsife College of Letters, Arts and Sciences in conjunction with the School of Cinematic Arts and requires 128 units.

Bachelor of Fine Arts, Cinematic Arts, Film and Television Production

This degree is a four-year program only available to incoming freshmen. The BFA in Cinematic Arts, Film and Television Production is granted through the School of Cinematic Arts and requires 128 units.

Bachelor of Arts — Interactive Entertainment

The Bachelor of Arts in Interactive Entertainment is granted through the USC Dornsife College of Letters, Arts and Sciences in conjunction with the School of Cinematic Arts. The degree requires 128 units.

Bachelor of Arts — Media Arts and Practice

This program is for students who want to harness the power of digital storytelling and media design to communicate across diverse fields beyond the entertainment industry. It prepares students to be skillful in the use of still images, video, Web design, app development, visualization and interactivity for future careers in which the ability to communicate visually is increasingly important. This degree is granted through the USC Dornsife College of Letters, Arts and Sciences in conjunction with the School of Cinematic Arts, and requires 128 units.

Bachelor of Fine Arts — Writing for Screen and Television

This is a unique program designed for students who wish to receive intensive training for non-fiction and fiction writing for screen and television. The BFA in Writing for Screen and Television is granted through the School of Cinematic Arts and requires 128 units.

Bachelor of Science in Business Administration (Cinematic Arts)

This program offers a unique coupling of the USC Marshall School of Business and the School of Cinematic Arts in a four-year interdisciplinary degree. In addition to the Marshall School of Business core classes, the students will also take a total of 24 units from the School of Cinematic Arts. This competitive program is offered to freshmen admitted to the Marshall School of Business as Business Scholars. Upon completion of all requirements, students will receive a Bachelor of Science in Business Administration (Cinematic Arts). See the Marshall School of Business (page 146xx) for course requirements.

Master of Arts, Cinematic Arts (Critical Studies)

This degree, with an emphasis in Critical Studies, is granted by the USC Graduate School in conjunction with the School of Cinematic Arts. This program requires 36 units.

Master of Fine Arts, Cinematic Arts, Film and Television Production

This professional degree requires 52 units.

Master of Fine Arts, Writing for Screen and Television

This program requires 44 units.

Master of Fine Arts, Animation and Digital Arts

This program requires 50 units.

Master of Fine Arts, Interactive Media

This program requires 50 units.

Master of Fine Arts, Producing for Film, Television, and New Media

The Peter Stark Producing Program requires 44 units.

Doctor of Philosophy, Cinematic Arts (Critical Studies)

The Ph.D. is based on a program of study and research culminating in the completion of a dissertation in the major field of study. A minimum of 68 semester units (exclusive of dissertation registration) beyond the baccalaureate is required. Applicants who have completed a Bachelor of Arts or Master of Arts degree in Cinematic Arts, or a closely related field, may apply to the Ph.D. program. The doctoral degree is granted by the Graduate School in conjunction with the School of Cinematic Arts.

Doctor of Philosophy, Cinematic Arts (Media Arts and Practice)

The Ph.D. in Media Arts and Practice program offers a rigorous and creative environment for scholarly innovation as students explore the intersection of design,

media and critical thinking while defining new modes of research and scholarship for the 21st century. Core to the program is its transdisciplinary ethos; after completing foundational course work, students design their own curricula, drawing on expertise across all divisions and research labs within the School of Cinematic Arts.

Minor in Cinematic Arts

A minor in cinematic arts is available to USC undergraduate students in all schools and departments. The minor provides the opportunity for students to become familiar with various aspects of media study. The program requires 20 units.

Minor in Animation and Digital Arts

The minor in animation offers students an introduction to the theory and practice of animation, including its relationship to the history of art and cinema, creative writing, and basic film production. It provides students with an opportunity to create both personal and collaborative work in a wide range of genres, from traditional character to contemporary experimental and computer animation. The program requires 24 units.

Minor in Science Visualization

The minor in science visualization offers an introduction to science visualization methodology and practice focused in an area of relevant research. The minor is structured to provide the skills and knowledge needed in science visualization, and will culminate in a capstone project under the close supervision of faculty in both animation and science. The program requires 16 units.

Minor in Game Design

Design for games is a young, exciting field applicable to media artists working all over the world, in different aspects of the industry and with many different tools. The game design minor teaches basic iterative design and prototyping skills while providing students the opportunity to explore design for new technologies and the skills of user assessment and usability testing. The program requires 24 units.

Minor in Game Entrepreneurism

The modern media, technology and entertainment fields are built on the backs of new businesses and new ideas. To start a successful business, you need skills and knowledge of the processes for setting up a business, finding investment and turning your creative project from prototype to finished project. The game entrepreneurship minor provides an educational path that teaches hard business thinking for creative entrepreneurs. The program requires 24 units.

Minor in Game Animation

The skills of the modern animator, visual effects artist, motion capture professional and many others are

of great value in the games industry when paired with an understanding of how these assets can be used in games and systems. The game animation minor provides an educational path that teaches both systems thinking and the skills and creativity of an animator. The program requires 24 units.

Minor in Game Audio

Game audio professionals must not only be competent in one area (e.g., expressly in music composing or in audio recording), but also in other areas of audio and in theories of procedurality and interaction. This minor provides a grounding in game design and systems thinking, while providing a theoretical backing and skills in audio design and composition to prepare students to design successful audio for the games industry. The program requires 24 units.

Minor in Screenwriting

The minor in screenwriting provides thorough training in the craft of writing for screen and television. Students learn the fundamentals of character, conflict and scene structure and build on their skills through each course as they write feature and television scripts in all genres and explore areas of their interest. Students may apply in the spring or fall semester. The program requires 16 units.

Minor in Digital Studies

The minor in digital studies explores the rich potential of digital media for critical analysis and creative discovery. Learning the exciting and dynamic potential of a

broad array of tools and technologies, students create innovative projects, from photo essays to Web-based documentaries, from interactive videos to sophisticated Websites, and from typography in motion to 3-D visualizations. The program requires 22 units.

Minor in Cinema-Television for the Health Professions

This minor is designed for students who plan to enter careers or professional programs in medicine after graduation and are interested in working with film and television producers to disseminate accurate health information to the public. The program requires 24 units. See the Keck School of Medicine of USC, page 793xx, for requirements.

Minor in Performing Arts Studies

The minor in performing arts provides an interdisciplinary inquiry into the nature and aesthetics of the performing arts. It combines the disciplines of cinematic arts, dance, music and theatre. The minor is a unique course of study that looks at how the performing arts contribute to a culturally literate society. The minor requires 20 units. See the USC School of Dramatic Arts, page 943xx, for requirements.

Minor in 2-D Art for Games

See USC Roski School of Fine Arts, page 690xx.

Minor in 3-D Art for Games

See USC Roski School of Fine Arts, page 690xx.

Minor in 3-D Animation

See the USC Viterbi School of Engineering, Information Technology, page 671xx.

Minor in Video Game Design and Management

See the USC Viterbi School of Engineering, Information Technology, page 672xx.

Writing for Screen and Television Certificate

The Writing for Screen and Television Certificate provides an established writer, domestic or international, with a one-year program of study. It is meant to accommodate a writer who has already attained significant recognition and would like to learn the craft of screenwriting. Sixteen units are required.

Graduate Certificate in the Business of Entertainment

This certificate program provides graduate-level education in various aspects of the business of film, television and new media. It requires 16 units.

Graduate Certificate in Digital Media and Culture

This certificate program is for graduate students from across the USC campus who want to explore the shifting nature of scholarly expression, pedagogical practice and research in the 21st century. It combines seminars with hands-on, lab-based workshops devoted to basic image manipulation, video editing, social media and Web design to facilitate sophisticated critical thinking and practice in and through multimedia. Twelve units are required.

General Requirements

Acceptance of Transfer Units

The School of Cinematic Arts does not accept courses taken in film and/or television production at other institutions to fulfill degree and minor requirements. Basic film or television history courses can sometimes be accepted for transfer credit.

No transfer credit will be accepted in lieu of CTPR 290, CTPR 294, CTPR 295, CTPR 310, CTPR 507 and CTPR 508 and any advanced production courses.

No transfer credits are accepted for the Peter Stark producing track, the graduate programs in animation and digital arts, screenwriting and interactive media.

Transfer policy for the Ph.D. requires advisement and approval of the division chair.

Waiver of Course Requirements

Under special circumstances waivers and substitutions are granted; check with the Cinematic Arts Office of Student Affairs. All course waivers and substitutions must be approved by the associate dean of academic affairs.

The following courses cannot be waived for students majoring in Film and Television Production: CTIN 584abcz, CTPR 290, CTPR 294, CTPR 295, CTPR 310, CTPR 480, CTPR 507, CTPR 508, CTPR 546L, CTPR 547L, CTPR 581abcz, CTPR 582abz, CTPR 583, CTPR 586abz, CTPR 587abcz.

Student Advisement

Each program has its own advisement system. Check with the program administrator or with the Cinematic Arts Office of Student Affairs. Cinematic Arts student affairs counselors are available to answer questions about degree programs, grades, advisement and other matters.

Grade Point Average Requirements

A minimum grade of C, 2.0 (A = 4.0), must be earned in all required and prerequisite courses in order to progress to the next course level. Students may attempt to improve a grade lower than a C (2.0) only one time by registering and retaking the specific course. Departmental approval is required in order to retake a School of Cinematic Arts course.

In addition, a minimum grade point average must be achieved to earn all cinematic arts degrees (see the individual program descriptions). For example, undergraduates and graduates must earn a minimum grade of C (2.0) in all required cinematic arts courses. However, graduate students must also achieve a B (3.0) average in all courses required for the degree.

Undergraduate students in the film and television production program who achieve a grade lower than a C (2.0) in CTPR 290 (BFA only), CTPR 294, CTPR 295 and CTPR 310, and graduate students in the production program who earn a grade lower than a C (2.0) in CTPR 507 and CTPR 508 may petition to retake the required sequence only once. Permission to retake any prerequisite

or core production courses requires prior departmental committee approval.

Students who do not satisfy the degree requirement after repeating a class will be disqualified from the program.

Policy on Films and Videos Produced by Students

All films, videos and computer disks produced with school equipment or facilities are the property of USC. Any income from distribution of student-produced films, videos and computer disks is used for the benefit of Cinematic Arts students through equipment purchases and so on. Students can purchase copies of their own work.

Tuition and Fees (Estimated)

Students in the School of Cinematic Arts' graduate programs pay differential tuition (see the Tuition and Fees section for current tuition rates). Undergraduate programs are assessed the university-wide tuition rate with a once-a-semester access fee of \$50. In addition, some classes are charged lab fees, as noted in the *Schedule of Classes*, and insurance fees. The university reserves the right to assess new fees or charges. The rates listed are subject to change without notice by action of the Board of Trustees.

The Bryan Singer Division of Critical Studies

The Bryan Singer Division of Critical Studies of the School of Cinematic Arts offers programs leading to the Bachelor of Arts, Master of Arts and Doctor of Philosophy degrees. This comprehensive curriculum includes courses that analyze the power and responsibility of American and international film and television and new media technologies from formal/aesthetic, historical, economic and ideological perspectives.

The division is committed to understanding film and television texts in relation to the world they represent; it studies not only the meanings of these texts but also the processes by which these meanings are constructed.

Applicants for the B.A. or M.A. or Ph.D. degrees must submit the supplemental application and materials to the Critical Studies Program. For specific instructions, contact the Cinematic Arts Office of Admission, University Park, Los Angeles, CA 90089-2211, (213) 740-8358, or online at cinema.usc.edu.

Bachelor of Arts

Bachelor of Arts, Cinematic Arts, Critical Studies

The Bachelor of Arts degree in Cinematic Arts, Critical Studies is granted by the USC Dornsife College of Letters, Arts and Sciences in conjunction with the School of Cinematic Arts. Undergraduate students take their pre-professional courses in the USC Dornsife College of Letters, Arts and Sciences, including the general education requirements. Major courses are selected from the curriculum of the School of Cinematic Arts. The degree requires 128 units, including 28 lower-division and 24 upper-division units in cinematic arts. A maximum of 40 School of Cinematic Arts upper-division units will apply to the B.A. degree. Before graduating, critical studies majors are encouraged to take at least one small non-lecture class that emphasizes student critical writing or research papers. This category may include (but is not limited to): CTCS 402, CTCS 411, CTCS 412, CTCS 414, sections of CTCS 464 or CTCS 469 that require a D clearance, CTCS 494, and CTCS 495.

General Education Requirements

The university's general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. This program requires six courses in different categories, plus writing, foreign language and diversity requirements, which together comprise the USC Core. See pages 63xx and 250xx for more information.

Required Production Course

Undergraduates admitted to the Critical Studies Program are required to take CTPR 290 Cinematic Communication. CTPR 290 introduces the interrelationship of visuals, sound and editing in cinematic communication. Students participate in directing and producing workshops as well as individual and group projects. Approximately \$1,000 should be budgeted for miscellaneous expenses, lab and insurance fees.

REQUIRED COURSES

		UNITS
CNTV 101	Reality Starts Here	2
CTCS 190	Introduction to Cinema	4
CTCS 191	Introduction to Television and Video	4
CTCS 192	Race, Class and Gender in American Film	4
CTCS 200	History of the International Cinema I	4
CTCS 201	History of the International Cinema II	4
CTCS 473	Film Theories	4
CTPR 290	Cinematic Communication	6

One course from the following:

CTCS 392	History of the American Film, 1925-1950	4
CTCS 393	History of the American Film, 1946-1975	4
CTCS 394	History of the American Film, 1977-present	4

Four courses from the following:

CTCS 367	Global Television and Media	4
CTCS 400	Non-Fiction Film and Television	4
CTCS 402	Practicum in Film/Television Criticism	4
CTCS 403	Studies in National and Regional Media	4
CTCS 404	Television Criticism and Theory	4
CTCS 406	History of American Television	4
CTCS 407	African-American Cinema	4
CTCS 409	Censorship in Cinema	4
CTCS 411	Film, Television and Cultural Studies	4
CTCS 412	Gender, Sexuality and Media	4
CTCS 414	Latina/o Screen Cultures	4
CTCS 464	Film and/or Television Genres	4
CTCS 469	Film and/or Television Style Analysis	4
CTCS 478	Culture, Technology and Communications	4
CTCS 482	Transmedia Entertainment	4
CTCS 494	Advanced Critical Studies Seminar	4
CTCS 495*	Honors Seminar	4

*Honors students only.

Grade Point Average Requirements

A minimum grade of C (2.0) must be earned in all required and prerequisite courses. A grade of C- (1.7) or lower will not satisfy a major requirement.

Honors Program

Critical Studies offers an honors track for advanced students. Admission to the honors track is made at the end of the junior year and requires a 3.5 overall GPA. Completion of the honors track is dependent upon successful completion of a designated honors section of CTCS 495 during the senior year. In this course, students will work with faculty in a seminar environment and produce an advanced term paper based on original research and analysis.

Limitations on Enrollment

No more than 40 upper-division units can be taken within the major without prior approval of the Dean, USC Dornsife College of Letters, Arts and Sciences.

Registration in graduate level courses (numbered 500) for undergraduate credit requires prior approval from the School of Cinematic Arts.

Curriculum Review

Cinematic arts majors are expected to meet with an academic adviser every semester to review their progress. Contact the Cinematic Arts Student Services Office, SCB 105, (213) 740-8358, for an appointment.

Master of Arts

The Master of Arts degree in Cinematic Arts with an emphasis in Critical Studies is administered through the Graduate School. Candidates for the degree are subject to the general requirements of the Graduate School (see page 97xx). Thirty-six units are required at the 400 level or higher, including a comprehensive examination. At least two-thirds of these units must be at the 500 level or higher.

Graduate Preparation Production Courses

Each graduate student must pass CTPR 507 (4 units) with a grade of C or better. This course provides a basic primer in production considered necessary for graduate studies in critical studies.

CTPR 507 Production I (4 units) introduces the fundamental principles of motion picture production, emphasizing visual and auditory communication. Each student makes several non-dialogue personal projects, serving as a writer, producer, cinematographer, director, sound designer and editor and takes a crew role on a collaborative project. Projects are shot on digital cameras and edited on non-linear systems. Approximately \$1,200 should be budgeted for miscellaneous expenses, lab and insurance fees.

REQUIRED COURSES

		UNITS
CNTV 501	Cinematic Arts Seminar	1
CTCS 500	Seminar in Film Theory	4
CTCS 506	Critical Studies Colloquium/Professional Seminar	1
CTCS 587	Seminar in Television Theory	4
CTPR 507	Production I	4

Three of the following:

CTCS 501	History of Global Cinema Before World War II	2
CTCS 502	History of Global Cinema After World War II	2
CTCS 503	Survey History of the United States Sound Film	2
CTCS 504	Survey of Television History	2
CTCS 505	Survey of Interactive Media	2

Two of the following:

CTCS 510	Case Studies in National Media and/or Regional Media	4, max 12
CTCS 511	Seminar: Non-Fiction Film/Video	4
CTCS 517	Introductory Concepts in Cultural Studies	4
CTCS 518	Seminar: Avant-Garde Film/Video	4

In addition, 8 units of cinematic arts electives are required.

Comprehensive Examination

As the final requirement for the M.A. degree, the comprehensive examination will be taken in the final spring semester of course work. There is no thesis option. The examination will consist of written responses to three questions selected from a list of fields, the appropriate fields chosen with the guidance of a faculty adviser.

If the student has completed all course work and is only taking the comprehensive examination, he or she must register in GRSC 810 Studies for Master's Examination.

Grade Point Average Requirements

A grade point average of 3.0 must be maintained in all graduate level course work. Courses in which a grade of C- (1.7) or lower is earned will not apply toward a graduate degree.

Time Limit

Although students are normally expected to complete the degree in two years, the degree must be completed within five years of the beginning of graduate work at USC.

Curriculum Review

At the beginning of their matriculation, and each semester thereafter, each M.A. candidate will confer with a designated faculty adviser who will monitor the student's progress.

Doctor of Philosophy

Doctor of Philosophy in Cinematic Arts (Critical Studies)

The degree of Doctor of Philosophy with an emphasis in Critical Studies is administered through the Graduate School. The Ph.D. program is tailored to the individual student's particular needs and interests. The overall course of study will be designed by the student, the student's designated adviser and, following the screening procedure, the student's qualifying exam committee chair (see Screening Procedure under Graduate Preparation Production Courses).

Admission

A bachelor's or master's degree in cinematic arts, or a closely related field, is required for admission to the Ph.D. program. Applicants with only a bachelor's degree must successfully fulfill all of the USC Critical Studies M.A. degree requirements as part of the degree program (see Screening Procedure).

Course Requirements

Each Ph.D. candidate must complete 68 units beyond the bachelor's degree, 43 of which must be at the 500 level or higher. (Up to 30 units may be transferred from graduate work completed at other institutions.) Dissertation units are not counted toward the 68-unit total. The required units will include seven to 12 courses in cinematic arts and 8 to 16 units in the minor area. The minor will be chosen by the student in close consultation with the adviser and will be in an academic field which supports the student's dissertation topic. Each student must complete the following course work toward the 68 unit total:

(1) *CNTV 501, CTCS 500, CTCS 506, CTCS 510, CTCS 587, CTPR 507*. These courses should be taken before the screening procedure.

(2) *Two of the following: CTCS 673, CTCS 677, CTCS 678, CTCS 679, CTCS 688*. These courses should be taken before the qualifying examination.

Graduate Preparation Production Course

Each candidate for the Ph.D. must complete CTPR 507 (4 units) with a grade of C or better. If the student enters the program with a master's degree in cinematic arts and possesses production experience, the student may request a waiver of this requirement. The waiver requires passing a written examination and submission of films/videos to the production faculty for review.

CTPR 507 Production I (4 units) is designed to introduce the fundamental principles of motion picture production. The course also introduces students to visual and auditory communication and individual filmmaking. Each student makes several non-dialogue personal projects, serving as writer, producer, director, cinematographer, sound designer and editor and takes a crew role on a collaborative project. Projects are shot on digital cameras and edited on non-linear systems. Approximately \$1,200 should be budgeted for miscellaneous expenses, lab and insurance fees. This course should be taken before the beginning of the screening procedure.

Screening Procedure

The Graduate School requires that programs administer an examination or other procedure at a predetermined point in the student's studies as a prerequisite to continuation in the doctoral program. This procedure is designed to review the student's suitability for continuing in the chosen Ph.D. program. The School of Cinematic Arts has determined that this procedure will occur no later than the end of the student's third semester of graduate course work at USC beyond the master's degree. The screening procedure process will include the following steps:

(1) If the faculty has determined during the admissions process that a comprehensive examination will be required as part of the screening procedure, an examination will be administered as appropriate. If the examination is passed to the faculty's satisfaction, the student may proceed to the next step in the screening procedure process. If the student fails to pass the examination, the faculty will determine if the student will be allowed to retake the examination the following semester before proceeding to the next step in the screening procedure process.

(2) The student will be interviewed and his or her progress in the program will be reviewed by the faculty to determine if the student will be approved for additional course work. If approved to continue, a qualifying exam committee chair will be selected by the student, with the approval of the faculty, who will serve as the student's adviser. It is strongly recommended that full-time study be pursued following the successful completion of the screening procedure.

Qualifying Exam Committee

Following a successful screening procedure, the student, in consultation with the qualifying exam committee chair and the Critical Studies faculty, will formally establish a five-member qualifying exam committee. The composition of the qualifying exam committee will be as specified by the Graduate School (see page 102xx). For the Ph.D. in Cinematic Arts (Critical Studies), the committee is ordinarily composed of four Critical Studies faculty members and an outside member from the candidate's minor area.

Foreign Language Requirement

The Critical Studies faculty will advise each student as to whether or not a foreign language is required. This requirement is determined by the student's dissertation topic. The requirement must be met at least 60 days before the qualifying examination.

Dissertation Proposal Presentation

Working closely with the qualifying exam committee chair, the student will prepare to present his or her dissertation proposal to the full faculty. This will be a formal written proposal which will include a statement of the proposed topic, four fields for examination derived from the general dissertation topic area (including a field from the minor area), a detailed bibliography, and an appropriate and comprehensive screening list of film/television titles. Formal presentation of the dissertation proposal will occur no later than the end of the semester prior to taking the qualifying examinations. The qualifying exam committee must approve the dissertation topic. Once the dissertation topic has been approved, the student will complete the Request to Take the Ph.D. Qualifying Examination form available from the program coordinator.

Qualifying Examinations

Written and oral examinations for the Ph.D. are given twice a year, in November and April. Questions for the written portion of the examination will be drafted by members of the qualifying exam committee who will also grade the examination. The qualifying examination comprises four examinations administered one each day for four days during a five-day period.

The oral examination will be scheduled within 30 days after the written examination. All qualifying exam committee members must be present for the oral portion of the qualifying examination.

Admission to Candidacy

A student is eligible for admission to candidacy for the Ph.D. degree after: (1) passing the screening procedure; (2) presenting the dissertation proposal and having it approved; (3) satisfying the language requirement, if applicable; (4) completing at least 24 units in residence;

and (5) passing the written and oral portions of the qualifying examination. Admission to candidacy is by action of the Graduate School.

Dissertation Committee

The dissertation committee is composed as specified by regulations of the Graduate School (see page 103xx). A dissertation based on original investigation and showing technical mastery of a special field, capacity for research and scholarly ability must be submitted.

CTCS 794

Registration for dissertation units, CTCS 794 (a and b), in the two semesters following admission to candidacy is the minimum requirement. These units cannot be applied toward the required 68 unit total. The student must register for CTCS 794 each semester after admission to candidacy until the degree requirements are completed. No more than 8 units of credit can be earned in CTCS 794.

Defense of Dissertation

An oral defense of the dissertation is required of each Ph.D. candidate. The dissertation committee will decide whether the examination is to take place after completion of the preliminary draft or the final draft of the

dissertation. The oral defense must be passed at least one week before graduation.

Policies

The following policies apply to each student admitted to the Ph.D. program.

Residency Requirements

At least one year of full-time graduate study (24 units excluding registration for CTCS 794) must be completed in residence on the main USC campus. The residency requirement may not be interrupted by study elsewhere. Residency must be completed prior to the qualifying examination.

Grade Point Average

An overall GPA of 3.0 is required for all graduate work. Courses in which a grade of C- (1.7) or lower is earned will not apply toward a graduate degree.

Leaves of Absence

A leave of absence may be granted under exceptional circumstances by petitioning the semester before the leave is to be taken. Refer to "Leave of Absence" in the Graduate and Professional Education section, page 89xx.

Changes of Committee

Changes in either the qualifying exam or dissertation committee must be requested on a form available from the Graduate School Website.

Completion of All Requirements

Everything involved in approving the dissertation must be completed at least one week before graduation. Approval by the dissertation committee, the Office of Academic Records and Registrar, and the thesis editor must be reported and submitted to the Graduate School by the date of graduation.

Time Limits

The maximum time limit for completing all requirements for the Ph.D. degree is eight years from the first course at USC applied toward the degree. Students who have completed an applicable master's degree at USC or elsewhere within five years from the proposed enrollment in a Ph.D. program must complete the Ph.D. in six years. Extension of these time limits will be made only for compelling reasons upon petition by the student. When petitions are granted, students will be required to make additional CTCS 794 registrations. Course work more than 10 years old is automatically invalidated and cannot be applied toward the degree.

Film and Television Production

The Division of Film and Television Production of the School of Cinematic Arts offers programs leading to the Bachelor of Arts, the Bachelor of Fine Arts and the Master of Fine Arts degrees.

The primary goals of the degree programs in film and television production are to develop the student's ability to express original ideas on film or video and to instill a thorough understanding of the technical and aesthetic aspects of motion pictures and television. Courses in production provide individual and group filmmaking experiences and the opportunity to learn all aspects of filmmaking in a collaborative environment.

Bachelor of Arts

The Bachelor of Arts in Cinematic Arts, Film and Television Production is granted through the USC Dornsife College of Letters, Arts and Sciences in conjunction with the School of Cinematic Arts. Students study within a framework which combines a broad liberal arts background with specialization in a profession. Bachelor of Arts students are enrolled in the USC Dornsife College of Letters, Arts and Sciences, where they take their pre-professional courses, including the general education requirements. Major courses are selected from the curriculum of the School of Cinematic Arts. The degree requires 128 units, including 18 lower-division units and 26 upper-division units in Cinematic Arts. A maximum of 40 School of Cinematic Arts upper-division units will apply to the B.A. degree.

Applicants must submit a supplemental application and materials to the Undergraduate Production Program. For specific instructions, contact the Cinematic Arts Office of Admission, University Park, Los Angeles, CA 90089-2211, (213) 740-8358 or online at cinema.usc.edu.

General Education Requirements

The university's general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. This program requires 6 courses in different categories, plus writing, foreign language and diversity requirements, which together comprise the USC Core. See pages 63xx and 250xx for more information.

Production Sequence

Candidates for the Bachelor of Arts degree in Cinematic Arts, Film and Television Production are required to take CTPR 294 Directing in Television, Fiction, and Documentary and CTPR 295L Cinematic Arts Laboratory the first semester they are enrolled in the program. These courses are taken in preparation for the next phase of the production sequence, CTPR 310 Intermediate Production.

In CTPR 294, students explore the basic concepts of directing in television, documentary and dramatic narrative by working with actors, documentary production and the creation of short television projects.

In CTPR 295L, students study the aesthetics and tools of the major disciplines of cinematic arts: producing, cinematography, sound and editing.

CTPR 310 Intermediate Production is the second phase of the production sequence. In this workshop, students work in small crews, learning to collaborate and explore the expressive principles of visual and audio communication; idea development and realization using image, movement, pace, the spoken word and other sounds. Most equipment and materials are provided by the school; however, approximately \$2,000 should be budgeted for miscellaneous expenses, lab and insurance fees.

To qualify for enrollment in CTPR 310, students must fulfill all requirements outlined in the guidelines distributed in CTPR 294.

Following CTPR 310, students must take CTPR 450 The Production and Post-Production Assistant, and refine their areas of interest by taking advanced-level practicum courses within the major disciplines of production: directing, editing, cinematography, sound, producing and production design. Thereafter students complete the final phase of the production sequence by taking one of the following courses: CTAN 448, CTPR 480, CTPR 484 or CTPR 486.

CTAN 448 Introduction to Film Graphics — Animation is a practical course in concepts, media and techniques related to the graphic film.

In CTPR 480 Advanced Production Workshop, production students form crews in which directors, producers, cinematographers, editors and sound designers collaborate to produce, shoot, edit and deliver a fictional narrative, documentary or experimental project in one semester.

Equipment and facilities are provided by the school. There are extra personal expenses associated with all production workshops.

To qualify for enrollment in CTPR 480, students must fulfill all requirements outlined in the CTPR 480 guidelines distributed in CTPR 450.

CTPR 484 Advanced Multi-Camera Television Workshop is a class in which students will produce a half-hour situation comedy pilot in one semester.

CTPR 486 Single Camera Television Dramatic Series (recommended preparation: CTPR 479) is a class in which students collaborate on the production and post-production of an original episodic drama, 44 minutes in length, that is shot on original sets.

CTPR 310, CTPR 480, CTPR 484 and CTPR 486 cannot be waived or substituted with another course or transfer credit under any circumstances.

COURSE REQUIREMENTS		UNITS
CNTV 101	Reality Starts Here	2
CTCS 190	Introduction to Cinema	4
CTCS 200	History of the International Cinema I, or	
CTCS 201	History of the International Cinema II	4
CTCS 294	Directing in Television, Fiction, and Documentary	4
CTCS 295L	Cinematic Arts Laboratory	4
CTPR 310	Intermediate Production	4, 6
CTPR 450	The Production and Post-Production Assistant	2
CTWR 413	Writing the Short Script I	2

and a choice of:

CTWR 411	Television Script Analysis	2
CTWR 414	The Screenplay	2
CTWR 416	Motion Picture Script Analysis	2

One of the following critical studies courses:

CTCS 367	Global Television and Media	4
CTCS 392	History of the American Film, 1925-1950	4
CTCS 393	History of the American Film, 1946-1975	4
CTCS 394	History of the American Film, 1977-present	4
CTCS 400	Non-Fiction Film and Television	4
CTCS 402	Practicum in Film/Television Criticism	4
CTCS 403	Studies in National and Regional Media	4
CTCS 404	Television Criticism and Theory	4
CTCS 406	History of American Television	4
CTCS 407	African American Cinema	4
CTCS 409	Censorship in Cinema	4
CTCS 411	Film, Television and Cultural Studies	4
CTCS 412	Gender, Sexuality and Media	4
CTCS 414	Latina/o Screen Cultures	4
CTCS 464	Film and/or Television Genres	4
CTCS 469	Film and/or Television Style Analysis	4
CTCS 478	Culture, Technology and Communications	4
CTCS 482	Transmedia Entertainment	4

Three of the following production practicum courses:

CTPR 421	Practicum in Editing	2
CTPR 424	Practicum in Cinematography	2
CTPR 438	Practicum in Producing	2
CTPR 440	Practicum in Sound	2, max 4
CTPR 465	Practicum in Production Design	2
CTPR 478	Practicum in Directing	2

One of the following courses:

CTAN 448	Introduction to Film Graphics — Animation	4
CTPR 480	Advanced Production Workshop	4, max 12
CTPR 484	Advanced Multi-Camera Television Workshop	4
CTPR 486	Single Camera Television Dramatic Series	4

Grade Point Average Requirements

A minimum grade of C, 2.0 (A = 4.0), must be earned in all required and prerequisite courses. A grade of C- (1.7) or lower will not fulfill a major requirement.

Students who do not earn the minimum grade of C (2.0) in CTPR 294, CTPR 295L and CTPR 310 after repeating these requirements will be disqualified from the program.

Limitations on Enrollment

No more than 40 upper-division units can be taken in the major without approval of the dean, USC Dornsife College of Letters, Arts and Sciences.

Registration in graduate level courses (numbered 500) for undergraduate credit requires prior approval of the School of Cinematic Arts.

Curriculum Review

Cinematic arts majors are expected to meet with an adviser every semester to review their progress. Contact the Cinematic Arts Student Services Office (SCB 105), (213) 740-8358, for an appointment.

Bachelor of Fine Arts

The Bachelor of Fine Arts in Cinematic Arts, Film and Television Production is a unique four-year program, offered by the School of Cinematic Arts, that combines a liberal arts background with comprehensive specialization in a profession. Students are provided an intensive production experience combined with requirements and electives from other School of Cinematic Arts programs including Critical Studies, Writing, Animation and Interactive Media. The degree requires 128 units, including 64 units in Cinematic Arts, many of which are taken in a sequential order.

Applicants must submit a supplemental application and materials to the Undergraduate Production Program. For specific instructions, contact the Cinematic Arts Office of Admission, University Park, Los Angeles, CA 90089-2211, (213) 740-8358 or online at cinema.usc.edu.

General Education Requirements

The university's general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. This program requires six courses in different categories, plus writing and diversity requirements, which together comprise the USC Core. See pages xx and xx for more information.

Production Sequence

Candidates for the Bachelor of Fine Arts degree in Film and Television Production are required to take CTPR 285

Lateral Thinking for Filmmaking Practice, CTPR 290 Cinematic Communication, CTPR 294 Directing in Television, Fiction, and Documentary and CTPR 295L Cinematic Arts Laboratory. These courses are taken in the first two years of the program in preparation for the next phase of the production sequence, CTPR 310 Intermediate Production.

CTPR 285 introduces contemporary concepts of production, emphasizing the variety of contemporary media and significant related concepts. Students will create mini-projects using laptops, phones and networks.

CTPR 290 introduces the interrelationship of visuals, sound and editing in cinematic communication. Students participate in directing and producing workshops as well as individual and group projects. Approximately \$1,000 should be budgeted for miscellaneous expenses, lab and insurance fees.

In CTPR 294, students explore the basic concepts of directing in television, documentary and dramatic narrative by working with actors, documentary production and the creation of short television projects.

In CTPR 295L, students study the aesthetics and tools of the major disciplines of cinematic arts: producing, cinematography, sound and editing.

CTPR 310 Intermediate Production is the second phase of the production sequence. In this workshop students work in small crews, learning to collaborate and explore the expressive principles of visual and audio communication; idea development and realization using image, movement, pace, the spoken word and other sounds. Most equipment and materials are provided by the school; however, approximately \$2,000 should be budgeted for miscellaneous expenses, lab and insurance fees.

To qualify for enrollment in CTPR 310, students must fulfill all requirements outlined in the CTPR 310 guidelines distributed in CTPR 294.

Following CTPR 310, students must take CTPR 450 The Production and Post-Production Assistant, and refine their areas of interest by taking advanced-level practicum courses within the major disciplines of production: directing, editing, cinematography, sound, producing and production design. Thereafter students complete the final phase of the production sequence by taking one of the following courses: CTPR 480, CTPR 484 or CTPR 486.

In CTPR 480 Advanced Production Workshop, production students form crews in which directors, producers, cinematographers, editors and sound designers collaborate to produce, shoot, edit and deliver a fictional narrative, documentary or experimental project in one semester.

Equipment and facilities are provided by the school. There are extra personal expenses associated with all production workshops.

To qualify for enrollment in CTPR 480, students must fulfill all requirements outlined in the CTPR 480 guidelines distributed in CTPR 450.

CTPR 484 Advanced Multi-Camera Television Workshop is a class in which students will produce a half-hour situation comedy pilot in one semester.

CTPR 486 Single Camera Television Dramatic Series is a class in which students collaborate on the production and post-production of an original episodic drama, 44 minutes in length, that is shot on original sets.

CTPR 285, CTPR 290, CTPR 294, CTPR 295L, CTPR 310, CTPR 480, CTPR 484 and CTPR 486 cannot be waived or substituted with another course or transfer credit under any circumstances.

COURSE REQUIREMENTS		UNITS
CNTV 101	Reality Starts Here	2
CTCS 190	Introduction to Cinema	4
CTCS 200	History of the International Cinema I	4
CTCS 201	History of the International Cinema II	4
CTPR 285	Lateral Thinking for Filmmaking Practice	2
CTPR 290	Cinematic Communication	6
CTPR 294	Directing in Television, Fiction, and Documentary	4
CTPR 295L	Cinematic Arts Laboratory	4
CTPR 310	Intermediate Production	6
CTPR 450	The Production and Post-Production Assistant	2
CTWR 413	Writing the Short Script I	2
CTWR 414	The Screenplay	2

and a choice of:

CTWR 411	Television Script Analysis	2
CTWR 416	Motion Picture Script Analysis	2

One of the following critical studies courses:

CTCS 367	Global Television and Media	4
CTCS 392	History of the American Film, 1925–1950	4
CTCS 393	History of the American Film, 1946–1975	4
CTCS 394	History of the American Film, 1977–present	4
CTCS 400	Non-Fiction Film and Television	4
CTCS 402	Practicum in Film/Television Criticism	4
CTCS 403	Studies in National and Regional Media	4
CTCS 404	Television Criticism and Theory	4
CTCS 406	History of American Television	4
CTCS 407	African American Cinema	4
CTCS 409	Censorship in Cinema	4
CTCS 411	Film, Television and Cultural Studies	4
CTCS 412	Gender, Sexuality and Media	4
CTCS 414	Latina/o Screen Cultures	4
CTCS 464	Film and/or Television Genres	4
CTCS 469	Film and/or Television Style Analysis	4
CTCS 478	Culture, Technology and Communications	4
CTCS 482	Transmedia Entertainment	4

Three of the following production practicum courses:

CTPR 421	Practicum in Editing	2
CTPR 424	Practicum in Cinematography	2
CTPR 438	Practicum in Producing	2
CTPR 440	Practicum in Sound	2
CTPR 465	Practicum in Production Design	2
CTPR 478	Practicum in Directing	2

One of the following production courses:

CTPR 480	Advanced Production Workshop	4
CTPR 484	Advanced Multi-Camera Television Workshop	4
CTPR 486	Single Camera Television Dramatic Series	4

One course from the following:

CTPR 458	Organizing Creativity: Entertainment Industry Decision Making	2
CTPR 466	The Art of the Pitch	2
CNTV 495	Internship in Cinematic Arts	2
CTPR 496	The Film Industry: Career Challenges and Choices for Women	2

Four units from the following:

CTAN 436	Writing for Animation	2
CTAN 448	Introduction to Film Graphics — Animation	4
CTAN 452	Introduction to 3-D Computer Animation	2, max 4
CTAN 462	Visual Effects	2
CTAN 495	Visual Music	2
CTIN 401L	Interface Design for Games	2
CTIN 463	Anatomy of a Game	4
CTIN 464	Game Studies Seminar	2, max 4
CTIN 482	Designing Online Multiplayer Game Environments	2
CTIN 483	Introduction to Game Development	4
IML 340	The Praxis of New Media: Digital Argument	2, max 4
IML 400	Creative Coding for the Web	4
IML 420	New Media for Social Change	4
IML 466	Digital Studies Symposium	4

Grade Point Average Requirements

A minimum grade of C, 2.0 (A = 4.0), must be earned in all required and prerequisite courses. A grade of C- (1.7) or lower will not fulfill a major requirement.

Students who do not earn the minimum grade of C (2.0) in CTPR 285, CTPR 290, CTPR 294, CTPR 295L and CTPR 310 after repeating these requirements will be disqualified from the program.

Limitations on Enrollment

Registration in graduate-level courses (numbered 500) for undergraduate credit requires prior approval from the School of Cinematic Arts.

Curriculum Review

Cinematic Arts majors are expected to meet with an adviser every semester to review their progress. Contact the Cinematic Arts Student Services Office (SCB 105), (213) 740-8358, for an appointment.

Master of Fine Arts

The Master of Fine Arts, Cinematic Arts, Film and Television Production, requires a minimum of 52 units in cinematic arts at the 400 or 500 level. A thesis is not required for the MFA degree.

Applications for the graduate production program are accepted for both fall and spring semesters. See a current Graduate Study Application for deadlines. Applicants must submit supplemental applications and materials to the Graduate Production Program. For specific instructions, contact the Cinematic Arts Office of Admission, University Park, Los Angeles, CA 90089-2211, (213) 740-8358 or online at cinema.usc.edu.

Graduate First Year Production Courses

CTPR 507 Production I (4 units), which brings together students from other School of Cinematic Arts divisions, introduces the fundamental principles of motion picture production, emphasizing visual and auditory communication. Projects are shot using digital cameras and edited on non-linear systems. Approximately \$1,200 should be budgeted for miscellaneous expenses, lab and insurance fees. Production students must take CTPR 507 concurrently with CTPR 510 Concepts of Cinematic Production, and CTWR 505 Creating the Short Film in the first semester.

In CTPR 508 Production II (6 units), students produce short films in small crews. The primary goal is to communicate effectively through sound/image relationships. Most equipment and materials are provided by the school, but approximately \$2,000 should be budgeted for miscellaneous expenses, lab and insurance fees. CTPR 508 is taken in the second semester with CTPR 509 Concepts of Cinematic Post Production — Editing and Sound and CTWR 529 Intermediate Screenwriting.

A minimum grade of C (2.0) in CTPR 507 and CTPR 508 is required in order to continue in the Master of Fine Arts program. Students earning lower than a C (2.0) in a core production course may repeat the requirement on a one time only basis upon approval of the division chair.

Students who do not earn the minimum grade of C (2.0) in CTPR 507 or CTPR 508 or satisfy the degree requirements after repeating a required course will be disqualified from the program.

Our program is distinguished by the understanding and hands-on practice our graduates achieve in all media-making disciplines; at the same time, each student pursues specialized interests in years two and three. To qualify for the MFA, each must demonstrate mastery of at least one of six disciplines: writing, producing, directing, cinematography, editing or sound. In the discipline chosen, the candidate must register for and complete an advanced project, as well as the defined prerequisites.

CTPR 507, CTPR 508, CTPR 509, CTPR 510, CTPR 546L, CTPR 547L, CTPR 581abcz, CTPR 582abz, CTPR 583, CTPR 585abz, CTPR 586ab and CTPR 587abcz cannot be waived or substituted with transfer credit under any circumstances.

Three-Year Requirements for the MFA in Production

YEAR ONE, FIRST SEMESTER		UNITS
CNTV 501*	Cinematic Arts Seminar	1
CTPR 507	Production I	4
CTPR 510	Concepts of Cinematic Production	1
CTWR 505	Creating the Short Film	2
		<hr/> 8

YEAR ONE, SECOND SEMESTER		UNITS
CTPR 508	Production II	6
CTPR 509	Concepts of Cinematic Post Production — Editing and Sound	2
CTWR 529	Intermediate Screenwriting	2
		10

**Students entering the program in the spring will take this course during their second semester.*

YEAR TWO, FIRST AND SECOND SEMESTERS		UNITS
CTPR 506	Visual Expression	2
CTWR 516	Advanced Motion Picture Script Analysis	2
Choose from the following:		
CTPR 479	Single Camera Television Dramatic Pilot, and	2
CTPR 486	Single Camera Television Dramatic Series	4
CTPR 546L	Production III, Fiction, or	6, max 12
CTPR 547L	Production III, Documentary	

One of the following:

CTPR 479*	Single Camera Television Dramatic Pilot	2
CTPR 497	Music Video Production	2
CTPR 522	Reality Television Survey	2
CTPR 523	Introduction to Multiple-Camera Production	2
CTPR 572	The World of Television: From Concept to Air and Everything in Between	2
CTIN 501	Interactive Cinema	2

**Students who choose CTPR 479/CTPR 486 in lieu of CTPR 546L or CTPR 547L cannot use CTPR 479 to satisfy this requirement.*

Six units from the required Cinematic Arts emphasis courses:

CTPR 484, CTPR 486, CTPR 531, CTPR 532, CTPR 533, CTPR 534, CTPR 535, CTPR 537, CTPR 538, CTPR 540, CTPR 551, CTPR 552, CTPR 553, CTPR 554, CTPR 556, CTPR 557, CTPR 558, CTPR 565, CTPR 573, CTWR 533a, CTWR 553

YEAR THREE, FIRST AND SECOND SEMESTERS		UNITS
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One of the following courses**:		
CTIN 584abcz	Individual Interactive Workshop	4-2-2-0
CTPR 546L	Production III, Fiction (taken for a second time in a different crew position or in addition to CTPR 547 or CTPR 479 and CTPR 486)	6, max 12
CTPR 547L	Production III, Documentary (taken for a second time in a different crew position or in addition to CTPR 546 or CTPR 479 and CTPR 486)	6, max 12
CTPR 581abcz	Individual Production Workshop	4-2-2-0
CTPR 582abz	Advanced Production Seminar	2-2-0
CTPR 583	Graduate Television Production	6
CTPR 585abz	Advanced Producing Project	2-2-0
CTPR 587abcz	Group Production Workshop	4-2-2-0
CTWR 533b	Writing the Feature Script	4
**Students must complete the prerequisites and follow the guidelines for these courses.		
One of the following production courses:		
CNTV 495	Internship in Cinematic Arts	2
CTPR 458	Organizing Creativity: Entertainment Industry Decision Making	2
CTPR 496	The Film Industry: Career Challenges and Choices for Women	2
CTPR 566	Developing and Selling Your Film and TV Projects	2

At least 6 units from the following critical studies courses:

CTCS 464	Film and/or Television Genres	4
CTCS 469	Film and/or Television Style Analysis	4
CTCS 501	History of Global Cinema Before World War II	2

CTCS 502	History of Global Cinema After World War II	2
CTCS 503	Survey History of the United States Sound Film	2
CTCS 504	Survey of Television History	2
CTCS 505	Survey of Interactive Media	2
CTCS 510	Case Studies in National Media and/or Regional Media	4, max 12
CTCS 511	Seminar: Non-Fiction Film/Video	4
CTCS 518	Seminar: Avant-Garde Film/Video	4
CTCS 564	Seminar in Film and Television Genres	4
CTCS 567	Seminar in Film/Television and a Related Art	4
CTCS 569	Seminar in Film and Television Authors	4
CTCS 585	Seminar in Film/Television Critical Theory and Production	4
CTCS 587	Seminar in Television Theory	4

Grade Point Average Requirements

A grade point average of at least 3.0 (A = 4.0) must be maintained in all USC course work toward the master's degree. Courses in which a grade of C- (1.7) or lower is earned will not apply toward a graduate degree.

Time Limit

Students must maintain satisfactory progress toward their master's degree at all times. The time limit to complete all requirements is three years from the first course at USC applied toward the Master of Fine Arts degree. Course work more than seven years old is invalidated and will not be applied toward the degree. Students are expected to meet with a faculty adviser every semester.

Graduate Review

One year prior to graduation, students must see their academic advisers for a curriculum and graduation review. Contact the Production Faculty Office for forms (213) 740-3317.

The John C. Hench Division of Animation and Digital Arts

The John C. Hench Division of Animation and Digital Arts is an international and multicultural program focusing on animation in all its forms. The fundamental philosophy of the program strongly encourages innovation and experimentation, and emphasizes imagination, creativity and critical thinking.

Bachelor of Arts

The Bachelor of Arts in Animation and Digital Arts is a unique four-year program granted through the USC Dornsife College of Letters, Arts and Sciences in conjunction with the School of Cinematic Arts. Students study within the framework that combines a broad liberal arts background with specialization in a profession. Areas of concentration might include character

animation, experimental animation, visual effects, 3-D computer animation, science visualization and interactive animation.

Undergraduate students take their pre-professional courses in the USC Dornsife College of Letters, Arts and Sciences, including the general education requirements. Major courses are selected from the curriculum of the School of Cinematic Arts. The degree requires 128 units, including a minimum of 16 lower-division units and a minimum of 26 upper-division units in Cinematic Arts.

General Education Requirements

The university's general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated

person. This program requires six courses in different categories, plus writing, foreign language and diversity requirements, which comprise the USC core. See pages 63xx and 250xx for more information.

REQUIRED COURSES		UNITS
CNTV 101	Reality Starts Here	2
CNTV 495*	Internship in Cinematic Arts	2 or 4
CTAN 101	Introduction to the Art of Animation	2
CTAN 102	Introduction to the Art of Movement	2
CTAN 201	Introduction to Animation Techniques	3
CTAN 202	Advanced Animation Techniques	3

CTAN 301	Introduction to Digital Animation	3
CTAN 302	Introduction to 3-D Computer and Character Animation	3
CTAN 305	Professionalism of Animation	2
CTAN 336	Ideation and Pre-Production	2
CTAN 436	Writing for Animation	2
CTAN 401ab	Senior Project	4-4
CTAN 432	The World of Visual Effects	2
CTAN 451	History of Animation	2
CTAN 496*	Directed Studies	2, max 4
CTCS 190	Introduction to Cinema, or	
CTCS 201	History of International Cinema	4
FADW 101	Introduction to Drawing: Studio Projects, Methods, Materials	4

*Students can take either one or both classes but must take a minimum of 2 units in a directed studies or internship.

Two units must be selected from the following list:

USC Dornsife College of Letters, Arts and Sciences — Physical Education		
PHED 104ab	Self-Defense	1-1
PHED 120ab	Yoga	1-1

USC Kaufman School of Dance		
DANC 181ab	Modern Dance	2
DANC 184abc	Jazz Dance	2
DANC 188ab	International Style Ballroom Dance	2
DANC 189ab	Tap Dance	2

USC School of Dramatic Arts		
THTR 122	Improvisation and Theatre Games	2
THTR 216	Movement for Actors	2

One course must be taken from the following list:

CTCS 192	Race, Class, and Gender in American Film	4
CTCS 392	History of the American Film, 1925–1950	4
CTCS 393	History of the American Film, 1946–1975	4
CTCS 400	Non-Fiction Film and Television	4
CTCS 403	Studies in National and Regional Media	4
CTCS 407	African American Cinema	4
CTCS 409	Censorship in Cinema	4
CTCS 464	Film and/or Television Genres	4
CTCS 469	Film and/or Television Style Analysis	4
CTCS 482	Transmedia Entertainment	4
Total units:		52

Areas of Concentration

Areas of concentration might include character animation, experimental animation, 3-D computer animation, visualizing science, interactive animation and visual effects. Students work in consultation with the undergraduate coordinator and faculty to help them decide their course of study while at USC.

Senior Project

In the spring semester of their third year students develop their senior project through CTAN 336 Ideation and Pre-Production under the guidance of the lecturer. This project will focus on an area of concentration studied throughout the B.A. by the student. At the end of this class, students present their senior project concepts for review to the Division of Animation and Digital Arts faculty. Progression into CTAN 401ab is contingent upon faculty committee approval.

In the final year, students concentrate on their senior projects, completing production and post-production. The student's project will be presented to the committee upon completion.

Completion is defined as a fully rendered, animated piece with a completed sound track. In the case of installation work, the piece must be mounted in a suitable space with all sound and animated components completed and functional.

In the case of an interactive work, the piece must be fully functional with completed animation, sound and interactivity.

In addition to completion of the senior project, the student must provide the faculty committee with written and visual documentation of the research. This can be documented as a publishable paper (2,000 words), Website or interactive DVD.

Grade Point Average Requirements

A minimum grade of C, 2.0 (A = 4.0), must be earned in all required and prerequisite courses. A grade of C- (1.7) or lower will not fulfill a major requirement.

Students who do not earn the minimum grade of C (2.0) in CTAN 101, CTAN 102, CTAN 201, CTAN 202, CTAN 301, CTAN 302 or CTAN 401ab after repeating these requirements will be disqualified from the program.

Limitations on Enrollment

Registration in graduate level courses (numbered 500) for undergraduate credit requires prior approval from the School of Cinematic Arts.

Curriculum Review

Cinematic arts majors are expected to meet with an adviser every semester to review their progress. Contact the Cinematic Arts Animation and Digital Arts Division Office, University Park, Los Angeles, CA 90089-2211, (213) 740-3986, or online at anim.usc.edu.

International Program

John C. Hench Animation and Digital Arts offers a fall semester abroad at Studio Art Centers International (SACI) in Florence, Italy. B.A. students will be required to take equivalent classes in animation and digital media while also benefiting from the wide range of liberal arts courses offered at SACI.

Master of Fine Arts

The Master of Fine Arts degree in Animation and Digital Arts is a three-year (six semester) graduate program designed for students who have clearly identified animation and digital art as their primary interest in cinema. The program focuses on animation production, including a wide range of techniques and aesthetic

approaches, from hand-drawn character animation to state-of-the-art interactive digital animation. While embracing traditional forms, the program strongly encourages innovation and experimentation, and emphasizes imagination, creativity and critical thinking. Students should graduate with a comprehensive knowledge of animation from conception through realization; an understanding of the history of the medium and its aesthetics; in-depth knowledge of computer animation software and the most important elements of digital and interactive media.

The program requires a minimum of 50 units: 32 units are in prescribed, sequential courses in the School of Cinematic Arts. The other 18 units are cinematic arts electives, 4 of which must be taken in the Division of Critical Studies. A thesis is required for the MFA degree. Ongoing workshops in new technologies, traditional and digital media provide additional educational opportunities for students.

Admission is granted once a year in the fall; there are no spring admissions. Approximately 14 students will be enrolled in each incoming class. In addition to practical production, the program also provides opportunities for fieldwork experience and internships to facilitate the student's transition into the profession.

Applicants for the MFA in Animation and Digital Arts must apply online and submit a hard copy of their portfolio. For specific instructions, contact the Cinematic Arts Animation and Digital Arts Division Office, University Park, Los Angeles, CA 90089-2211, (213) 740-3986, or online at cinema.usc.edu.

The application deadline is December 1 for the fall semester.

Prior knowledge of fundamental digital animation concepts and techniques is recommended.

The Graduate School Two-Thirds Rule

The school requires 50 units minimum to graduate from the MFA in Animation and Digital Arts program, and two-thirds must be at the 500 level, not including 4 units of CTAN 594ab Master's Thesis.

Requirements for the MFA in Animation and Digital Arts

YEAR ONE, FIRST SEMESTER		UNITS
CNTV 501	Cinematic Arts Seminar	1
CTAN 451	History of Animation	2
CTAN 522	Animation Department Seminar	1
CTAN 544	Introduction to the Art of Animation	3
CTAN 577a	Fundamentals of Animation	2
CTAN 579	Expanded Animation	2

YEAR ONE, SECOND SEMESTER		UNITS
CTAN 522	Animation Department Seminar	1
CTAN 536	Storytelling for Animation	2
CTAN 547	Animation Production I	3
CTAN 577b	Fundamentals of Animation	2
Elective*		

YEAR TWO, FIRST SEMESTER		UNITS
CTAN 522	Animation Department Seminar	1
CTAN 555	Animation Design and Production	4
Elective*		

YEAR TWO, SECOND SEMESTER		UNITS
CTAN 505	The Business of Animation	2
CTAN 591	Animation Pre-Thesis Seminar	2
Elective*		

YEAR THREE, FIRST SEMESTER		UNITS
CTAN 594a	Master's Thesis	2

YEAR THREE, SECOND SEMESTER		UNITS
CTAN 594b	Master's Thesis	2
Total required units		32

*A minimum total of 18 elective units must be taken.

Cinematic Arts Electives

To complete the 50 units required for the MFA in Animation and Digital Arts, students are required to take a minimum of 18 School of Cinematic Arts elective units. Four of those units must be taken from the following Critical Studies courses:

ELECTIVES		UNITS
CTCS 501	History of Global Cinema Before World War II	2
CTCS 502	History of Global Cinema After World War II	2
CTCS 503	Survey History of the United States Sound Film	2
CTCS 504	Survey of Television History	2
CTCS 505	Survey of Interactive Media	2
CTCS 510	Case Studies in National Media and/or Regional Media	4, max 12
CTCS 511	Seminar: Non-Fiction Film/Video	4
CTCS 517	Introductory Concepts in Cultural Studies	4
CTCS 518	Seminar: Avant-Garde Film/Video	4
CTCS 564	Seminar in Film and Television Genres	4

CTCS 569	Seminar in Film and Television Authors	4
CTCS 585	Seminar in Film/Television Critical Theory and Production	4
CTCS 587	Seminar in Television Theory	4
CTCS 673	Topics in Theory	4
CTCS 678	Seminar in Film Theory and Medium Specificity	4, max 8
CTCS 679	Seminar in Genre and/or Narrative Theory	4

Thesis Project

In order to begin work on the thesis project, students must first successfully propose their project to a committee of MFA animation and digital arts program faculty. Their proposal is prepared during the spring semester of their second year as part of their pre-thesis class CTAN 591.

In order to pass the pre-thesis class, the thesis proposal must be presented and approved by the thesis committee at the end of the fourth semester. Students cannot change their approved thesis project after the completion of CTAN 591. Throughout the pre-thesis and thesis years of study, students will meet regularly with an MFA animation and digital arts faculty adviser(s) and thesis committee to develop and refine the proposal and discuss the progress of their work. The adviser(s) will be a member of the thesis committee.

The proposal itself will include a written treatment of the project with a discussion of similar work in the field and its relationship to the proposed project. It will describe aesthetic issues to be explored and specific techniques to be employed in its realization. It will also include a storyboard or visualization, budget and schedule, in addition to supporting materials created by the student demonstrating his/her ability to pursue the project. The thesis committee will make comments and decide whether the student may go forward with his/her project. Upon acceptance, the student will begin work on the project, otherwise revising the proposal and meeting again with the committee.

A mid-residency review of the thesis project will take place in the first semester of the final year of study. The student must show that deadlines set in the proposal have been met and that progress consistent with the proposal has been made. The committee may, if necessary, suggest modifications to the project, which the student is then obligated to implement.

In the final year, students concentrate on their thesis projects, completing production and post-production. The student's thesis will be presented to the committee upon completion.

Completion is defined as a fully rendered, animated piece with a completed sound track (guide mix acceptable). In the case of live action and visual effects projects, at least 70 percent of the final film must be animated. In the case of installation work, the piece must be mounted in a suitable space with all sound and animated components completed and functional. In the case of an interactive work the piece must be fully functional with completed animation, sound and interactivity.

In addition to completion of the thesis project, the student must provide the thesis committee with written and visual documentation of the research. This will be documented as a Website or interactive DVD. The documentation comprises the following and should include a publishable research paper: synopsis; artist's statement and research paper; learning objectives — focus of research; type of project — animation, installation, interactive, etc.; research presentation in the format/medium in which the project is to be seen; script and storyboard or conceptual drawings if applicable; style approach, including source references for image shot structure, etc.; sound design and references; collaborators — if any; audience — who it is intended for and who will benefit from the research; budget; marketing and distribution plan.

Criteria for successful completion include: 40 percent originality, 40 percent quality of execution and 20 percent quality of research documentation.

Grade Point Average Requirements

A grade point average of at least 3.0 (A = 4.0) must be maintained in all USC course work toward the master's degree. Courses in which a grade of C- (1.7) or lower is earned will not apply toward a graduate degree. Courses below a C must be repeated.

Time Limit

Students must maintain satisfactory progress toward their master's degrees at all times. The time limit to complete all requirements is three years from the first course at USC applied toward the Master of Fine Arts degree. Course work more than seven years old is invalidated and will not be applied toward the degree.

Writing for Screen and Television

Bachelor of Fine Arts

The Bachelor of Fine Arts in Writing for Screen and Television is a unique, four-year program for students who seek intensive professional preparation for a career in screen and television writing. This rigorous program emphasizes small, workshop-style classes, and attracts students from all over the world. Students attend a variety of guest speaker presentations, take high level industry internships, are provided with mentors and taught by world-class professors.

Each fall, a class of 26 undergraduate writing students is selected to begin the program. A total of 128 units is required for completion of the Bachelor of

Fine Arts degree; 50 of these units are taken in a prescribed sequential order. Seventy-two units are required for the major. There are no spring admissions.

Applicants must submit supplemental application and materials to the program office. For specific instructions, contact Writing for Screen and Television, University Park, Los Angeles, CA 90089-2211 or telephone (213) 740-3303, or online at cinema.usc.edu.

General Education Requirements

The university's general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated

person. This program requires six courses in different categories, plus writing and diversity requirements, which together comprise the USC Core. See pages 63xx and 250xx for more information.

Required Production Courses

Undergraduate writing students are required to take CTPR 290 Cinematic Communication. This introductory production course is taken during the sophomore year.

CTPR 290 introduces that interrelationship of visuals, sound and editing in cinematic communication. Students participate in directing and producing workshops as well as individual and group projects. Approximately

\$1,000 should be budgeted for miscellaneous expenses, lab and insurance fees.

Four-Year Major Requirements (72 units)

YEAR ONE, FIRST SEMESTER		UNITS
CNTV 101	Reality Starts Here	2
CTCS 190	Introduction to Cinema	4
CTPR 409	Practicum in Television Production	2
CTWR 106a	Screenwriting Fundamentals	4
		12

YEAR ONE, SECOND SEMESTER		UNITS
CTCS 201	History of the International Cinema II	4
CTWR 106b	Screenwriting Fundamentals	4
CTWR 120	Genesis of the Screenplay	2
		10

YEAR TWO, FIRST SEMESTER		UNITS
CTPR 290	Cinematic Communication	6
CTWR 206a	Writing the Screenplay	4
CTWR 314	Writing to be Performed	2
CTWR 321	Introduction to Television Writing	2
		14

YEAR TWO, SECOND SEMESTER		UNITS
CTWR 206b	Writing the Screenplay	4
CTWR 250	Breaking the Story	2
		6

YEAR THREE, FIRST SEMESTER		UNITS
CTCS 464	Film and/or Television Genres, or	
CTCS 469	Film and/or Television Style Analysis	4
CTWR 305	Advanced Screenwriting: The Relationship Screenplay	4
CTWR 416	Motion Picture Script Analysis	2
CTWR 434	Writing the Half-Hour Comedy Series	2
		12

YEAR THREE, SECOND SEMESTER		UNITS
CTWR 411	Television Script Analysis	2
CTWR 421	Writing the Hour-Long Dramatic Series	2
CTWR 453	Advanced Feature Rewriting	4
		8

YEAR FOUR, FIRST SEMESTER		UNITS
CTWR 418a	Senior Thesis, or	
CTWR 419a	Senior Thesis in Dramatic Television	4
		4

YEAR FOUR, SECOND SEMESTER		UNITS
CTWR 418b	Senior Thesis, or	
CTWR 419b	Senior Thesis in Dramatic Television	4
CTWR 459a	Entertainment Industry Seminar	2
		6

ELECTIVES

		UNITS
Suggested electives in Cinematic Arts include:		
CTWR 404	Foundations of Comedy	2
CTWR 410L	Character Development and Storytelling for Games	4
CTWR 417	Script Coverage and Story Analysis	2
CTWR 422	Creating the Dramatic Television Series	2
CTWR 430	The Writer in American Cinema and Television	2
CTWR 431	Screenwriters and Their Work	2, max 6
CTWR 433	Adaptations: Transferring Existing Work to the Screen	2
CTWR 435	Writing for Film and Television Genres	2 or 4, max 8
CTWR 437	Writing the Original Situation Comedy Pilot	4, max 8
CTWR 438	Linked Narrative Storytelling for the Web	4
CTWR 439	Writing the Original Dramatic Series Pilot	4, max 8
CTWR 449	Rewriting the Original Dramatic Series Pilot	4, max 8
CTWR 468	Screenwriting in Collaboration	4, max 8
CTWR 487	Staff Writing the Multi-Camera Television Series	4, max 8
CTWR 499	Special Topics	2-4, max 8

Grade Point Average Requirements

A minimum grade of C (2.0) must be earned in all required and prerequisite courses (a grade of C- (1.7) or lower will not fulfill a major requirement).

Master of Fine Arts

The Master of Fine Arts degree in Writing for Screen and Television, is an intensive two-year degree program that concentrates on writing for narrative film and television. During the course of their studies, students benefit from a wide array of internship and mentorship opportunities available as a result of the university's close links to the Los Angeles film industry's top screenwriters, directors, production companies and studios.

Course work includes practical instruction in everything a working writer needs to learn about the filmmaker's art and craft. Writing is taught in small workshop-style classes. The approach focuses on the visual tools of storytelling, developing stories from characters and then on an Aristotelian three act structure. Fractured narratives, ensemble stories, experiments with time and points of view, as well as other idiosyncratic styles of storytelling, are also addressed. The curriculum covers other professional concerns, including legal issues, agents and the Writer's Guild, as well as the history and analysis of cinema and television. Classes are taught by working writers with a wide variety of skills, experience and approaches.

Each fall 32 students are selected to begin the Graduate Writing for Screen and Television Program; there are no spring admissions. Applicants must submit a supplemental application and materials to the Graduate Writing for Screen and Television Program. For specific instructions, contact the Graduate Writing for Screen

and Television Program, University Park, Los Angeles, CA 90089-2211, or telephone (213) 740-3303, or online at cinema.usc.edu.

A total of 44 units is required. A minimum of 30 units must be 500-level or above.

Required Courses (32-34 units)

YEAR ONE, FIRST SEMESTER		UNITS
CNTV 501	Cinematic Arts Seminar	1
CTWR 513	Writing the Short Script	2
CTWR 514a	Basic Dramatic Screenwriting	2
CTWR 572	Practicum in Directing Actors for Film	2
		7

YEAR ONE, SECOND SEMESTER		UNITS
CTWR 502	Graduate Writing Symposium	1
CTWR 521	Advanced Hour-Long Television Drama, or	
CTWR 514b	Basic Dramatic Screenwriting	2
CTWR 516	Advanced Motion Picture Script Analysis	2
CTWR 534	Advanced Half-Hour Television Comedy	2
		7

YEAR TWO, FIRST SEMESTER		UNITS
CTWR 515a	Practicum in Screenwriting, or	
CTWR 517a	Thesis in Half-Hour Television Comedy, or	
CTWR 519a	Thesis in Television Drama	4
		4

YEAR TWO, SECOND SEMESTER		UNITS
CTWR 515b	Practicum in Screenwriting, or	
CTWR 517b	Thesis in Half-Hour Television Comedy, or	
CTWR 519b	Thesis in Television Drama	4
CTWR 520	Advanced Scene Writing Workshop	2
CTWR 559	The Business of Writing for Screen and Television	2
		8

A minimum of two units of course work with a production component is required.

COURSES WITH A PRODUCTION

COMPONENT (2 UNITS)		UNITS
CTAN 448	Introduction to Film	
	Graphics — Animation	4
CTIN 501	Interactive Cinema	2
CTPR 476	Directing the Comedic Scene	2
CTPR 479	Single Camera Television	
	Dramatic Pilot	2
CTPR 484	Advanced Multi-Camera	
	Television Workshop	4
CTPR 504	Fundamentals of Production	4
CTPR 507	Production I	4
CTWR 438	Linked Narrative Storytelling	
	for the Web	4
CTWR 487	Staff Writing the Multi-Camera	
	Television Series	4

A minimum of four units of critical studies course work is required.

CTCS COURSES (4 UNITS)		UNITS
CTCS 464	Film and/or Television Genres	4
CTCS 469	Film and/or Television Style Analysis	4
CTCS 501	History of Global Cinema Before World War II	2
CTCS 502	History of Global Cinema After World War II	2
CTCS 503	Survey History of the United States Sound Film	2
CTCS 504	Survey of Television History	2
CTCS 505	Survey of Interactive Media	2
CTCS 510	Case Studies in National Media and/or Regional Media	4, max 12
CTCS 511	Seminar: Non-Fiction Film/Video	4
CTCS 518	Seminar: Avant-Garde Film/Video	4
CTCS 564	Seminar in Film and Television Genres	4
CTCS 569	Seminar in Film and Television Authors	4
CTCS 587	Seminar in Television Theory	4

Electives (10–12 units)

Students may choose from the following electives to complete their degree. Additional courses beyond the required 4 units of CTCS course work, from the critical studies list of courses, may be taken as electives, as can additional courses from the list of courses with a production component. Electives outside of cinematic arts are available with departmental approval.

ELECTIVES		UNITS
CTAN 436	Writing for Animation	2
CTIN 458	Business and Management of Games	2
CTIN 483	Introduction to Game Development	4
CTIN 488	Game Design Workshop	4
CTIN 558	Business of Interactive Media	2
CTPR 486	Single Camera Television Dramatic Series	4
CTPR 506	Visual Expression	2
CTWR 404	Foundations of Comedy	2
CTWR 411	Television Script Analysis	2
CTWR 422	Creating the Dramatic Television Series	2, max 4

CTWR 430	The Writer in American Cinema and Television	2
CTWR 431	Screenwriters and Their Work	2, max 6
CTWR 433	Adaptations: Transferring Existing Work to the Screen	2
CTWR 441	Writing Workshop in Creativity and Imagination	2
CTWR 499	Special Topics	2–4, max 8
CTWR 518	Introduction to Interactive Writing	2
CTWR 541	Dreams, the Brain, and Storytelling	2
CTWR 550	Advanced Story Development	2
CTWR 555	Pitching for Film and Television	2
CTWR 599	Special Topics	2–4, max 8

WRITING INTENSIVE ELECTIVES		UNITS
CTWR 410L	Character Development and Storytelling for Games	4
CTWR 435	Writing for Film and Television Genres	2 or 4, max 8
CTWR 437	Writing the Original Situation Comedy Pilot	4, max 8
CTWR 438	Linked Narrative Story-telling for the Web	4
CTWR 439	Writing the Original Dramatic Series Pilot	4, max 8
CTWR 453	Advanced Feature Rewriting	4
CTWR 468	Screenwriting in Collaboration	4, max 8
CTWR 487	Staff Writing the Multi-Camera Television Series	4, max 8
CTWR 553	Advanced Rewriting Workshop	4

Courses listed as writing intensive electives are considered heavy writing classes; students may take a maximum of three courses and 10 units of writing intensive courses per semester, required and/or elective.

Grade Point Average Requirement

An overall grade point average of 3.0 (A = 4.0) must be maintained in all courses. In addition, an overall grade point average of 3.0 in all units attempted is required to qualify for registration in CTWR 515ab or CTWR 519ab. Courses in which a grade of C- (1.7) or lower is earned will not apply toward a graduate degree. In lieu of a thesis the student is required to either complete a full-length screenplay, which will be developed in CTWR 515ab; or a pilot script and a series bible

for a half-hour television comedy, which will be developed in CTWR 517ab; or an original one-hour drama television pilot, mid-season episode and series bible, which will be developed in CTWR 519ab; this final work must be accepted by the Division of Writing Graduation Committee.

Time Limit

Students must maintain satisfactory progress toward their master’s degrees at all times. The time limit to complete all requirements is three years from the first course at USC applied toward the Master of Fine Arts degree. Course work more than seven years old is automatically invalidated and may not be applied toward the degree.

Writing for Screen and Television Certificate

The Writing for Screen and Television Certificate is awarded for one year of study.

Applicants must be recognized writers outside of the field of screenwriting.

The course of study is no less than 16 units total, over two semesters. Writers, both U.S. and international, should appeal directly to the chair for admission in the fall semester.

Admission is granted to only one or two scholars a year, and is of the highest selectivity. Applicants must have earned an undergraduate degree with at least a 3.0 GPA. Additionally, candidates must show compelling reason for not applying to a formal degree program. The general course of study is as follows:

FIRST SEMESTER		UNITS
CTWR 513	Writing the Short Script	2
CTWR 514a	Basic Dramatic Screenwriting, or	2
CTWR 515a	Practicum in Screenwriting	4
CTWR 516	Advanced Motion Picture Script Analysis	2
CTWR 572	Practicum in Directing Actors for Film	2
		8
SECOND SEMESTER		UNITS
CTPR 536	Editing for Scriptwriters	2
CTWR 514b	Basic Dramatic Screenwriting, or	2
CTWR 515b	Practicum in Screenwriting	4
CTWR electives		2–6
		8

The Peter Stark Producing Program

Master of Fine Arts

The Peter Stark Producing Program is an innovative two-year (four semester) full-time graduate program designed to prepare a select group of highly motivated students for careers as independent film and television producers or as executives in motion picture and television companies.

Approximately 25 Peter Stark Program students are enrolled each fall (there are no spring admissions). The curriculum places equal emphasis on the creative and

the managerial, to enhance and develop artistic skills and judgment while providing a sound background in business essentials. Each course is continually updated to ensure that the Stark program remains responsive to the needs of our students and the ever-changing motion picture, television and new media field.

A minimum of 44 units of 500-level courses is required for the Peter Stark Producing Program leading to the MFA degree.

In CMPP 541ab, first-year students get hands-on filmmaking experience, working on collaborative projects in

different roles. Projects are shot using digital cameras and edited on non-linear systems. Equipment is provided by the school.

In lieu of a thesis, the completion requirement is a fully developed film project with an attendant production schedule, budget assumptions, and marketing/distribution plan.

An internship period between school years gives students an opportunity to gain valuable experience with participating entertainment companies. The internships last a minimum of eight weeks, and are paid and subject

to availability, academic performance and good standing in the first year of studies.

The completion of a film/television industry internship, or combination of internships, of at least eight weeks, is a requirement for graduation.

During the second year, Peter Stark Producing Program students have an opportunity to initiate and produce a 20-minute short film financed by the program. Projects are selected on a competitive basis.

Films must be produced by a Stark student or team of two Stark students. Scripts may be written by a Stark student or a student from the Cinematic Arts Writing Division. The director may be a Stark student or a student from the Cinematic Arts Production Division. Each Stark student may only perform one major task on the film, i.e., director or writer or producer. Each team has a professional adviser available as needed. Completed films are screened at the school's "First Film" festival, and have also been selected for outside festivals.

Inquiries regarding the program should be addressed to: The Peter Stark Program, USC School of Cinematic Arts, University Park, Los Angeles, CA 90089-2211. Telephone (213) 740-3304, FAX (213) 745-6652 or email pstark@cinema.usc.edu.

Two-Year Requirements for the MFA in Producing for Film, Television, and New Media

YEAR ONE, FIRST SEMESTER		UNITS
CNTV 501	Cinematic Arts Seminar	1
CMPP 541a	Producing Workshop	4
CMPP 550	Script Analysis for the Producer	2
CMPP 563	Producing Symposium	2
CMPP 589a	Graduate Film Business Seminar	3
		12

YEAR ONE, SECOND SEMESTER		UNITS
CMPP 541b	Producing Workshop	4
CMPP 560	Script Development	2
CMPP 568	Producing for Television	2
CMPP 589b	Graduate Film Business Seminar	4
		12

YEAR TWO, FIRST SEMESTER		UNITS
CMPP 561	Motion Picture and Television Marketing	2
CMPP 565	Scheduling and Budgeting	4
CMPP 566	Finance	2
CMPP 571	Producing the Screenplay	2
		10

YEAR TWO, SECOND SEMESTER		UNITS
CMPP 564	Digital Media and Entertainment	2
CMPP 569	Seminar on Non-Mainstream Producing	2
CMPP 570	Advanced Television	2
CMPP 592	Individual Project Seminar	4
		10

Grade Point Average Requirement

An overall GPA of 3.0 (A = 4.0) is required for graduation. Courses in which a grade of C- (1.7) or lower is earned will not apply toward a graduate course. A grade of C-, D or F in any course may be cause for termination.

Time Limit

Students must maintain satisfactory progress toward their master's degrees at all times. The degree must be completed three years after the beginning of graduate work at USC.

Interactive Media and Games

The Interactive Media and Games Division offers a Bachelor of Arts in Interactive Entertainment and a Master of Fine Arts in Interactive Media as well as a number of courses in computer-based entertainment for non-majors. The fundamental philosophy of the division is coherent with that of the school's program, stressing creativity of expression, experimentation and excellence in execution.

Bachelor of Arts

The Bachelor of Arts in Interactive Entertainment is granted through the USC Dornsife College of Letters, Arts and Sciences in conjunction with the School of Cinematic Arts. Students study within a framework, which combines a broad liberal arts background with specialization in a profession. Undergraduate students take their pre-professional courses in the USC Dornsife College of Letters, Arts and Sciences, including the general education requirements. Major courses are selected from the curriculum of the School of Cinematic Arts. The degree requires 128 units, including a minimum of 48 units in the major.

General Education Requirements

The university's general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. This program requires six courses in different categories, plus writing, foreign language and diversity requirements, which comprise the USC Core. See pages 63xx and 250xx for more information.

Required Production Courses

Undergraduates admitted to the Interactive Entertainment Program are required to take CTPR 290 Cinematic Communication.

CTPR 290 introduces the interrelationship of visuals, sound and editing in cinematic communication. Students participate in directing and producing workshops as well as individual and group projects. Approximately \$1,000 should be budgeted for miscellaneous expenses, lab and insurance fees.

REQUIRED COURSES		UNITS
CNTV 101	Reality Starts Here	2
CSCI 101L	Fundamentals of Computer Programming, or	3
CTIN 101	Fundamentals of Procedural Media	2
CTCS 190	Introduction to Cinema	4
CTIN 190	Introduction to Interactive Entertainment	4
CTIN 483	Introduction to Game Development	4
CTIN 484L*	Intermediate Game Development	2
CTIN 488	Game Design Workshop	4
CTIN 489*	Intermediate Game Design Workshop	2
CTPR 290	Cinematic Communication	6
*Enrollment in CTIN 484L and CTIN 489 is concurrent		
At least 6 units of the following are required:		
CSCI 102L	Data Structures	3
CSCI 200L	Object Oriented Programming	3
CTAN 330	Animation Fundamentals	2

CTAN 443L	Character Development for 3-D Animation and Games	2
CTAN 452	Introduction to 3-D Computer Animation	2
CTIN 401L	Interface Design for Games	2
CTIN 403L	Advanced Visual Design for Games	2
CTIN 404L	Usability Testing for Games	2
CTIN 405L	Design and Technology for Mobile Experiences	2
CTIN 406L	Sound Design for Games	2
CTIN 458	Business and Management of Games	2
CTIN 464	Game Studies Seminar	2
CTIN 482	Designing Online Multiplayer Game Environments	2
CTIN 485L	Advanced Game Development	2
CTIN 486	Immersive Design Workshop	2
IML 340*	The Praxis of New Media: Digital Argument	2
IML 346*	Methods in Digital Research	2

At least one of the following is required:

CTCS 478	Culture, Technology and Communications	4
CTCS 482	Transmedia Entertainment	4
CTIN 110	Statistical Analysis for Games: Storytelling with Numbers	4
CTIN 462	Critical Theory and Analysis of Games	4
CTIN 463	Anatomy of a Game	4

CTWR 410L	Character Development and Storytelling for Games	4
IML 420*	New Media for Social Change	4
*Prerequisite: IML 104 or IML 140 or IML 201.		

At least one of the following is required:

CTIN 459L	Game Industry Workshop	4
CTIN 491L	Advanced Game Project I	4
CTIN 492L	Experimental Game Topics	4

Four additional upper-division units of Cinematic Arts electives

Grade Point Average Requirements

A minimum grade of C, 2.0 (A = 4.0), must be earned in all required and prerequisite courses. A grade of C- (1.7) or lower will not fulfill a major requirement.

Students who do not earn the minimum grade of C (2.0) in CTIN 190, CTIN 483, CTIN 484L, CTIN 488 or CTIN 489 after repeating these requirements will be disqualified from the program.

Limitations on Enrollment

Registration in graduate-level courses (numbered 500) for undergraduate credit requires prior approval of the School of Cinematic Arts.

Curriculum Review

Cinematic arts majors are expected to meet with an adviser every semester to review their progress. Contact the Interactive Media Program Office, SCA 223, (213) 821-4472, for an appointment.

Master of Fine Arts

The Interactive Media and Games Division offers a Master of Fine Arts in Interactive Media as well as a number of courses in computer-based entertainment for non-majors. The fundamental philosophy of the division is coherent with that of the programs of the school, stressing creativity of expression, experimentation and excellence in execution.

The Interactive Entertainment track is part of the MFA in Interactive Media. This track focuses on game design and innovation and offers a list of suggested electives best suited for interests in interactive entertainment. Students in the Interactive Entertainment track are required to follow the MFA in Interactive Media curriculum.

The MFA in Interactive Media is a three-year intensive program that requires 50 units of which 36 are requirements and 14 are electives. Of these electives, a minimum of 6 units must be taken in the School of Cinematic Arts. Students are required to complete an advanced interactive project which they design and produce in CTIN 594ab Master's Thesis.

Computer and digital production facilities for the program are provided by the school. However, students should budget additional funds for incidental expenses for intermediate and advanced projects. Cost will vary depending on the scope of a student's project. For the first year production course, approximately \$1,000 will be needed for miscellaneous costs, lab and insurance fees.

The program is intended to prepare students for creative careers in the emerging field of interactive entertainment. While the program does not require advanced computer capabilities, familiarity and comfort with computer based authoring and production/post-production tools is recommended.

The creation of interactive media requires a combination of skills from the traditional media of film and television as well as a deep understanding of the effects of interactivity upon the quality of experience. Therefore, we emphasize and encourage collaboration with students in other Cinematic Arts programs.

Approximately 12 students are admitted in the fall semester (there are no spring admissions).

Applicants for the MFA in Interactive Media must submit a supplemental application and materials to the Interactive Media Program. For specific instructions contact the Cinematic Arts Office of Admission, University Park, Los Angeles, CA 90089-2211, (213) 740-8358 or online at cinema.usc.edu.

Requirements for the MFA in Interactive Media

YEAR ONE, FIRST SEMESTER		UNITS
CNTV 501	Cinematic Arts Seminar	1
CTCS 505	Survey of Interactive Media	2
CTIN 534L	Experiments in Interactivity I	4
CTIN 541	Design for Interactive Media	2
		9

YEAR ONE, SECOND SEMESTER		UNITS
CTIN 511	Interactive Media Seminar	1
CTIN 544	Experiments in Interactivity II	2
CTWR 518	Introduction to Interactive Writing	2
Electives		4
		9

YEAR TWO, FIRST SEMESTER		UNITS
CTIN 511	Interactive Media Seminar	1
CTIN 532	Interactive Experience and World Design	4
CTPR 506	Visual Expression	2
Electives		4
		11

YEAR TWO, SECOND SEMESTER		UNITS
CTIN 511	Interactive Media Seminar	1
CTIN 542	Interactive Design and Production	4
CTIN 548	Preparing the Interactive Project	2
CTIN 558	Business of Interactive Media	2
Electives		2-4
		11-13

YEAR THREE, FIRST SEMESTER		UNITS
CTIN 594a	Master's Thesis	2
Electives		2
		4

YEAR THREE, SECOND SEMESTER		UNITS
CTIN 594b	Master's Thesis	2
Electives		2
		4

ADDITIONAL REQUIREMENT

CNTV 495* Internship in Cinematic Arts 2
**Students must complete at least one internship for 2 units to complete the MFA in Interactive Media. Students are encouraged to complete their internship requirement in the summer before their final year of study.*

ELECTIVES**		UNITS
At least 6 units from the following:		
CMPP 591	Producing Practicum	2
CTAN 443L*	Character Development for 3-D Animation and Games	2, max 4
CTAN 451	History of Animation	2
CTAN 452*	Introduction to 3-D Computer Animation	2, max 4
CTAN 462	Visual Effects	2
CTAN 501	Experiments in 2-D Digital Animation	2
CTAN 502ab	Experiments in Stereoscopic Imaging	2-2
CTAN 576	Seminar in Film/Television and New Technologies	4
CTAN 577a	Fundamentals of Animation	2
CTCS 409	Censorship in Cinema	4
CTCS 478*	Culture, Technology and Communications	4
CTCS 482	Transmedia Entertainment	4
CTCS 502	History of the Global Cinema After World War II	2
CTCS 504	Survey of Television History	2
CTCS 564*	Seminar in Film and Television Genres	4
CTIN 401L*	Interface Design for Games	2
CTIN 403L*	Advanced Visual Design for Games	2
CTIN 404L*	Usability Testing for Games	2
CTIN 405*	Design and Technology for Mobile Experiences	2
CTIN 406L*	Sound Design for Games	2
CTIN 458*	Business and Management of Games	2
CTIN 459L*	Game Industry Workshop	4
CTIN 462*	Critical Theory and Analysis of Games	4
CTIN 463*	Anatomy of a Game	4
CTIN 464*	Game Studies Seminar	4
CTIN 482*	Designing Online Multiplayer Game Environments	2
CTIN 483*	Introduction to Game Development	4
CTIN 484L*	Intermediate Game Development	2
CTIN 485L*	Advanced Game Development	2
CTIN 486	Immersive Design Workshop	2
CTIN 488*	Game Design Workshop	4
CTIN 489*	Intermediate Game Design Workshop	2
CTIN 491L*	Advanced Game Project I	4, max 8
CTIN 492L*	Experimental Game Topics	4
CTIN 493L	Advanced Game Project II	2, max 4
CTIN 497ab	Interactive Media Startup	1-1
CTIN 499*	Special Topics	2-4
CTIN 501	Interactive Cinema	2
CTIN 506	Procedural Expression	2
CTIN 520	Experience and Design of Public Interactives	2

CTIN 590	Directed Research	1-12
CTPR 455	Introduction to Production Design	2
CTPR 566	Developing and Selling Your Film and TV Projects	2
CTWR 410L*	Character Development and Storytelling for Games	4
CTWR 513	Writing the Short Script	2
CTWR 520	Advanced Scene Writing Workshop	2

No more than 3 units from the following:

CSCI 480	Computer Graphics	3
CSCI 485	File and Database Management	3

*Courses suggested as part of the Interactive Entertainment track.

**Courses not listed may satisfy this requirement with approval of the program chair.

Thesis Project

In order to begin work on the thesis/advanced project, students must first successfully propose their project to a committee of MFA interactive media program faculty. The proposal is prepared during the second year of study in CTIN 548 Preparing the Interactive Project and is submitted at the end of the second year. Throughout

the three years of study, students will meet regularly with an MFA interactive media program adviser to develop and refine the proposal and discuss the progress of their work. The adviser will be a member of the thesis committee.

The proposal itself will include a written treatment of the project with a discussion of similar work in the field and its relationship to the proposed project. It will describe aesthetic issues to be explored and specific techniques to be employed in its realization. It will also include a project visualization, budget and schedule, in addition to supporting materials created by the student demonstrating his or her ability to pursue the project. The faculty committee will make comments and decide whether the student may go forward with his or her project. Upon acceptance, the student will begin work on the project, otherwise revising the proposal and meeting again with the committee.

In the third and final year, students concentrate on their thesis projects in CTIN 594ab Master's Thesis, completing production and post-production. A final review will take place in the second semester of the third year. The committee will meet and the student must show and defend the work.

Criteria for successful completion include: 50 percent originality and 50 percent quality of execution.

Grade Point Average Requirement

An overall GPA of at least 3.0 (A = 4.0) must be maintained in all USC course work toward the master's degree.

A minimum grade of C (2.0) must be earned in all required courses. Students who do not achieve a grade of C (2.0) in the core courses CTIN 532, CTIN 534, CTIN 542 and CTIN 544 after repeating these requirements will be disqualified from the program. The core courses as well as CTIN 594ab cannot be waived or substituted with transfer credits under any circumstances.

Time Limit

Students must maintain satisfactory progress toward their master's degrees at all times. The degree must be completed three years from the first course at USC applied toward the Master of Fine Arts degree. Course work more than seven years old is invalidated and will not be applied toward the degree.

Graduate Review

One year prior to graduation, students are required to file MFA forms for a curriculum and graduation review. Contact the Interactive Media Program Office for forms.

Media Arts and Practice

Bachelor of Arts

The Bachelor of Arts in Media Arts and Practice offers a robust curriculum centered on the history, theory and practice of digital media in creative and scholarly contexts. Students will study the evolution of media in concert with new cinematic technologies, from the work of early innovators such as Laszlo Moholy-Nagy, through the pioneering experiments in information theory embodied by thinkers such as Claude Shannon, Norbert Wiener and Vannevar Bush, and on to the experiments of artists and designers working with interactivity, immersion, stereoscopy and performance for over a century. Students will also learn how to understand the relationship among media forms, emerging technologies and culture, and how to author in diverse media platforms for both critical and creative practice. The media arts and practice major is ideal for students who are interested in the expanded array of cinematic technologies that can be used for the creative and critical expression of ideas, as well as those who want to develop skills in visual communication for use in diverse fields.

General Education Requirements

The university's general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. This program requires six courses in different categories, plus writing, foreign language and diversity requirements, which comprise the USC Core. See page xx and page xx for more information.

Thesis Sequence

The media arts and practice major culminates in a digital thesis project that students research, develop and construct during their senior year. These projects will engage a key issue faced by contemporary media arts practitioners. Building on the success of the capstone projects created by students in the Honors in Multimedia Scholarship program, and taking advantage of the rich network of leading faculty advisers, these theses will represent the convergence of conceptual excellence and digital innovation.

REQUIRED COURSES		UNITS
CNTV 101	Reality Starts Here	2
IML 102	Digital Studies Studio I	4
IML 103	Digital Studies Studio II	4
IML 295L	Race, Class and Gender in Digital Culture	4
IML 310	Professionalism for Media Arts	2
IML 340	The Praxis of New Media: Digital Argument	2
IML 346	Methods in Digital Research	2
IML 388	Computational Thinking and Design	4
IML 400	Creative Coding for the Web	4
IML 404	Tactical Media	4
IML 422	Information Visualization	4
IML 441	Advanced Thesis Project I	4
IML 444	Thesis Project II	4
IML 466	Digital Studies Symposium	4

Choose one of the following courses:

CTCS 478	Culture, Technology and Communications	4
CTCS 482	Transmedia Entertainment	4

Choose one of the following courses:

IML 309	Integrative Design for Mobile Devices	4
IML 420	New Media for Social Change	4
IML 450	Critical Play and Documentary Games	4

Total: 56 units

Grade Point Average Requirements

A minimum grade of C (2.0) must be earned in all required and prerequisite courses. A grade of C- (1.7) or lower will not satisfy a major requirement.

Curriculum Review

Media arts and practice majors are expected to meet with an academic adviser every semester to review their progress. Contact the Media Arts and Practice Program at iml@cinema.usc.edu for an appointment.

Doctor of Philosophy in Cinematic Arts (Media Arts and Practice)

The Ph.D. in Media Arts and Practice program offers a rigorous and creative environment for scholarly innovation as students explore the intersection of design, media and critical thinking while defining new modes of research and scholarship for the 21st century. Core to the program is its transdisciplinary ethos; after completing foundational course work, students design their own curricula, drawing on expertise across all divisions and research labs within the School of Cinematic Arts.

Admission

A bachelor's or master's degree in media arts, or a closely related field, is required for admission to the

Ph.D. program. In addition to submitting an application to USC Graduate Admissions, applicants for the Ph.D. must submit the supplemental application and materials to the Media Arts and Practice Division. For specific instructions, contact the School of Cinematic Arts Office of Admission, University Park, Los Angeles, CA 90089-2211, (213) 840-8358, or online at cinema.usc.edu/imap.

Course Requirements

Each Ph.D. candidate must complete 64 units beyond the bachelor's degree, exclusive of CNTV 794 Doctoral Dissertation. (Up to 28 units may be transferred from graduate work completed at other institutions.) At least two-thirds of the units applied towards the degree (including transfer work and not including CNTV 794) must be at the 500 level or higher. The required units will include 8 to 16 units in a minor area. The minor will be chosen by the student in close consultation with the adviser and will be in an academic field that supports the student's dissertation topic and project. Each student must complete the following course work:

(1) CNTV 501 (1), CNTV 600 (4), CNTV 601 (4), CNTV 602 (4), CNTV 603 (1-1), CNTV 604 (4). These courses should be taken before the screening procedure.

(2) At least 8 units in theory based course work within Cinematic Arts.

(3) At least 14 units in practice-based course work within Cinematic Arts. Courses outside of Cinematic Arts will be considered for approval by the student's adviser. The above courses should be taken before the qualifying exam.

(4) At least 4, but no more than 8 units of CNTV 794abcdz Doctoral Dissertation.

Screening Procedure

The Graduate School requires that programs administer an examination or other procedure at a predetermined point in the student's studies as a prerequisite to continuation in the doctoral program. The screening procedure in the School of Cinematic Arts is designed to review the student's suitability for continuing in the chosen Ph.D. program. Two separate screening procedures will measure a student's progress at two points in their work toward the degree. The first screening will occur no later than the end of the student's third semester of graduate course work beyond the master's degree or after 46 units of graduate work beyond the bachelor's degree. The second screening will occur no earlier than one-half of a semester following the first screening. The screening procedure process will include the following steps:

(1) First screening. Prior to the first screening, the student will select a faculty adviser and formulate a provisional course of study. The student will also select a subcommittee of media arts and practice faculty to review his or her work. At the first screening, the student will be interviewed and his or her progress in the program will be reviewed by the faculty to determine if the student will be approved for additional course work. Following a successful first screening, the student, in consultation with the faculty adviser, will formally establish a five-member qualifying exam committee. The composition of the qualifying exam committee will be as specified by the Graduate School (see page 102xx). For the Ph.D. in Cinematic Arts (Media Arts and Practice),

the committee is ordinarily composed of four cinematic arts faculty members and an outside member from the candidate's minor area.

(2) Second screening. Working closely with the faculty adviser and qualifying exam committee, the student will prepare to present his or her dissertation project proposal to a subcommittee of media arts and practice faculty. This will be a formal written proposal detailing the proposed topic, three fields for examination derived from the general dissertation topic area (complete with bibliographies, filmographies and mediographies for each area). Formal presentation of the dissertation project proposal will occur no later than the end of the semester prior to taking the qualifying examinations. The qualifying exam committee must approve the dissertation topic. Once the dissertation topic has been approved, the student will complete a Request to Take the Ph.D. Qualifying Examination form available from the program coordinator.

Qualifying Exam Committee

Following a successful screening procedure, the student, in consultation with the qualifying exam committee chair and the Media Arts and Practice faculty, will formally establish a five-member qualifying exam committee. The composition of the qualifying exam committee will be as specified by the Graduate School (see page 102xx). For the Ph.D. in Cinematic Arts (Media Arts and Practice), the committee is ordinarily composed of four cinematic arts faculty members and an outside member from the candidate's minor area.

Foreign Language Requirement

The cinematic arts faculty will advise each student as to whether or not a foreign language is required. This requirement is determined by the student's dissertation topic. The requirement must be met at least 60 days before the qualifying examination.

Dissertation Proposal Presentation

Working closely with the qualifying exam committee chair, the student will prepare to present his or her dissertation proposal to the full faculty. This will be a formal written proposal which will include a statement of the proposed topic, three fields for examination derived from the general dissertation topic area (including a field from the minor area), a detailed bibliography and an appropriate and comprehensive screening list of prior work in the field of inquiry. Formal presentation of the dissertation proposal will occur no later than the end of the semester prior to taking the qualifying examinations. The qualifying exam committee must approve the dissertation topic. Once the dissertation topic has been approved, the student will complete a Request to Take the Ph.D. Qualifying Examination form available from the program coordinator.

Qualifying Examinations

Written and oral examinations for the Ph.D. are given twice a year, in November and April. Questions for the written portion of the examination will be drafted by members of the qualifying exam committee who will also grade the examination. The qualifying examination comprises three examinations administered one day each for three days over a five-day period. The oral

examination will be scheduled within 30 days after the written examination. All qualifying exam committee members must be present for the oral portion of the qualifying examination.

Admission to Candidacy

A student is eligible for admission to candidacy for a Ph.D. degree after: (1) passing the second screening procedure; (2) presenting the dissertation proposal and having it approved; (3) satisfying the language requirement, if applicable; (4) completing at least 24 units in residence; and (5) passing the written and oral portions of the qualifying examination. Admission to candidacy is by action of the Associate Vice Provost for Graduate Programs.

Dissertation Committee

The dissertation committee is composed as specified by regulations of the Graduate School (see page 103xx). A dissertation based on original investigation and showing technical mastery of a special field, capacity of research and scholarly ability must be submitted.

CNTV 794

Registration for dissertation units, CNTV 794ab, in the two semesters following admission to candidacy is the minimum requirement. These units cannot be applied towards the required 64 unit total. The student must register for CNTV 794 each semester after admission to candidacy until the degree requirements are completed. No more than 8 units of credit can be earned in CNTV 794.

Defense of Dissertation

An oral defense of the dissertation is required of each Ph.D. candidate. The dissertation committee will decide whether the examination is to take place after completion of the preliminary draft or the final draft of the dissertation. The oral defense must be passed at least one week before graduation.

Policies

The following policies apply to each student admitted to the Ph.D. program.

Residency Requirements

At least one year of full-time graduate study (24 units excluding registration for CNTV 794) must be completed in residence on the main USC campus. The residency requirement may not be interrupted by study elsewhere. Residency must be completed prior to the qualifying examination.

Grade Point Average

An overall GPA of 3.0 is required for all graduate work. Courses in which a grade of C- (1.7) or lower is earned will not apply toward a graduate degree.

Leave of Absence

A leave of absence may be granted under exceptional circumstances by petitioning the Graduate School the semester before the leave is to be taken.

Change of Committee

Changes to either the qualifying exam or dissertation committee must be requested on a form available from the Graduate School.

Completion of All Requirements

Everything involved in approving the dissertation must be completed at least one week before graduation. Approval by the dissertation committee, the Office of Academic Records and Registrar, and the thesis editor must be reported on the triple card and submitted to the Graduate School by the date of graduation.

Time Limits

The maximum time limit for completing all requirements for the Ph.D. degree is eight years from the first course at USC applied toward the degree. Students who have completed an applicable master's degree at USC or elsewhere within five years from the proposed enrollment in a Ph.D. program must complete the Ph.D. in six years. Extension of these time limits will be made only for compelling reasons upon petition by the student.

When petitions are granted, students will be required to make additional CNTV/794 registrations. Course work more than 10 years old is automatically invalidated and cannot be applied toward the degree.

Graduate Certificate in Digital Media and Culture

Contemporary scholarship is undergoing profound shifts as new technologies alter how scholars interact, conduct research, author and visualize their work, as well as how they teach. The certificate program in digital media and culture explores the shifting nature of scholarly expression, pedagogical practice and research in the 21st century, combining seminars with hands-on, lab-based workshops in order to facilitate sophisticated critical thinking and practice in and through multimedia.

Open to graduate students interested in emerging modes of creative, networked and media-rich scholarship, the program will be offered both on-site as a complement to work students are already doing in different programs across campus, as well as a fully online

experience for distance learners. Overall, whether on-site or online, the program seeks to provide participants with a sophisticated conceptual framework for considering the emerging landscape of scholarship in the digital age, as well as a broad overview of contemporary scholarly multimedia as it intersects with media art, information design, interactive media and communication studies.

REQUIRED COURSES		UNITS
Choose a minimum of 12 units from the following:		
IML 500	Digital Media Tools and Tactics	2, max 4
IML 501L	Seminar in Contemporary Digital Media	4
IML 502	Techniques of Information Visualization	4
IML 535	Tangible Computing in the Humanities and Sciences	4
IML 555	Digital Pedagogies	4
Total: 12 units		

Institute for Multimedia Literacy

Email: iml@cinema.usc.edu
iml.usc.edu

Director: Holly Willis

Overview

The Institute for Multimedia Literacy offers undergraduate students an opportunity to approach their chosen major field(s) of study through the critical application of multimedia scholarship and expression in the networked world. Students can pursue either a minor in digital studies or the Honors in Multimedia Scholarship program. IML courses are open to students from all departments and schools. No prior experience with multimedia is required, but students should be willing to engage with new media technologies, ways of thinking and modes of expression.

Honors in Multimedia Scholarship Program Overview

A century of mass media and the advent of digital communication have transformed the way ideas are expressed and understood across the university. As a result, the notion of literacy, which has traditionally referred to the reading and writing of printed materials, has fundamentally expanded to include new forms of expression. The Honors in Multimedia Scholarship program offers students an opportunity to learn new approaches to the production of knowledge through the critical application of multimedia.

The program includes a systematic introduction to the history, theory and practice of multimedia scholarship within a range of disciplinary and interdisciplinary contexts. Students develop and refine their abilities to conduct research and publish work in formats appropriate to their field of study: video, audio, image, Web or some integration of these forms. The program is open to students from all disciplines.

In the Honors in Multimedia Scholarship program, students are expected to integrate theory into the practice of multimedia scholarship; for this reason, courses

include discussion of historical and theoretical material, instruction in basic research practices, as well as opportunities to develop skills in multimedia authorship, collaboration, leadership and creative thinking.

Students earn Honors in Multimedia Scholarship by completing a minimum of 16 units of required course work culminating in a capstone thesis seminar during their final year.

To maintain small classes and allow for extensive discussion and project development, the Honors in Multimedia Scholarship program requires students to be highly motivated; there is extensive reading, writing and multimedia authoring. The required courses are not available for pass/no pass registration.

Information about courses and other program offerings can be obtained from the student adviser at the Institute for Multimedia Literacy office. Email iml@cinema.usc.edu.

COURSE REQUIREMENTS		UNITS
4 units (minimum) from the following:		
IML 104	Introduction to Digital Studies	2
IML 140	Workshop in Multimedia Authoring	2, max 4
IML 201	The Languages of Digital Media	4
All of the following:		
IML 346	Methods in Digital Research	2
IML 440	Thesis Project I	4
IML 444	Thesis Project II	4
2 units (minimum) from the following:		
IML 140*	Workshop in Multimedia Authoring	2, max 4
IML 295L	Race, Class and Gender in Digital Culture	4
IML 340	The Praxis of New Media: Digital Argument	2, max 4
IML 400	Creative Coding for the Web	4

IML 420	New Media for Social Change	4, max 8
IML 422	Information Visualization	4
IML 466	Digital Studies Symposium	4
Total units (minimum)		16

**IML 140 can only be taken twice for a maximum of 4 units. If IML 140 is taken twice to fulfill the lower-division requirement it cannot also be taken as an elective.*

Note: Students in good standing may elect to take graduate (500-level) IML courses, pending departmental approval.

Minor in Digital Studies

The minor in Digital Studies explores the rich potential of digital media for critical analysis and creative discovery. Learning the exciting and dynamic potential of a broad array of tools and technologies, students create innovative projects, from photo essays to Web-based documentaries, from interactive videos to sophisticated Websites, and from typography in motion to 3-D visualizations. Elective courses explore media for social change, the ethics of virtual worlds, transmedia expression and more, allowing students to use media in pursuit of their own interests and to enhance their major.

All digital studies courses combine theory and practice in lab-based seminars featuring hands-on tutorials to support students in producing sophisticated media-rich work. Participants in this minor gain powerful skills useful in future endeavors within or beyond academia, where the ability to work effectively with media is a crucial job skill.

Course Requirements

A total of 22 units is required to complete the minor: 4 units of core lower-division IML course work, 14 units of upper-division IML course work and 4 units of upper-division elective course work. All minor courses must be taken for a letter grade.

Applicants must have earned an undergraduate degree with at least a 3.0 GPA. For further information contact the School of Cinematic Arts Office of Student-Industry Relations, SCA 235, (213) 740-4432.

Minor and International Programs

Minor in Cinematic Arts

The minor in cinematic arts combines an introduction to this exciting and influential field with a diversified set of classes in critical studies, production, screenwriting, the entertainment industry, animation, and interactive media. The curriculum is purposely flexible; students may choose to sample different areas in their upper-division courses or emphasize a single primary interest, such as production.

To be eligible for the cinematic arts minor, a student must be in good academic standing and have a declared major. To declare the cinematic arts minor a student must submit a Change of Major/Minor form to Cinematic Arts Student Affairs, CTV G130.

Course Requirements for the Minor

A total of 20 units is required for the minor in cinematic arts, one 4-unit lower-division course and 16 upper-division units.

LOWER-DIVISION REQUIREMENT		UNITS
CTCS 190*	Introduction to Cinema, or	4
CTCS 191	Introduction to	
	Television and Video	
*Gateway course		

UPPER-DIVISION REQUIREMENT		UNITS
8 units from the following:		
CTAN 450abc	Animation Theory and Techniques	2-2-2
CTAN 451	History of Animation	2
CTAN 462	Visual Effects	2
CTCS 303	Japanese Anime	2
CTCS 411	Film, Television and Cultural Studies	4
CTCS 412	Gender, Sexuality and Media	4
CTCS 464	Film and/or Television Genres	4
CTCS 466	Theatrical Film Symposium	4
CTCS 467	Television Symposium	4
CTCS 469	Film and/or Television Style Analysis	4
CTIN 190	Introduction to Interactive Entertainment	4
CTIN 482	Designing Online Multiplayer Game Environments	2
CTPR 327	Motion Picture Camera	3
CTPR 335	Motion Picture Editing	3
CTPR 385	Colloquium: Motion Picture Production Techniques	4
CTPR 409	Practicum in Television Production	2, 4
CTPR 460	Film Business Procedures and Distribution	2, 4
CTPR 461	Managing Television Stations and Internet Media	2
CTPR 484	Advanced Multi-Camera Television Workshop	4
CTWR 411	Television Script Analysis	2
CTWR 412	Introduction to Screenwriting	2
CTWR 416	Motion Picture Script Analysis	2

Plus 8 additional upper-division units of Cinematic Arts electives.

Grade Point Average Requirement

A minimum grade of C (2.0) in each course is required. A grade of C- (1.7) or lower does not fulfill a minor requirement.

Minor in Animation and Digital Arts

The minor in animation offers students an introduction to the theory and practice of animation, including its relationship to the history of art and cinema, creative writing and basic film production. It provides students with an opportunity to create both personal and collaborative work in a wide range of genres, from traditional character to contemporary experimental and computer animation. This includes painting, cel, stop motion, collage, mixed media, 2- and 3-D computer animation software and interactive digital media. Successful completion of a final project is required.

Most students will enter the minor in animation program in their sophomore year at USC.

A student enrolled on the undergraduate level at USC may apply to minor in animation if he or she is maintaining normal degree progress.

Animation minor applications are reviewed by a panel of faculty members, with admissions made for the fall semester only. A maximum of 12 students will be admitted per year.

Application Procedures

To be considered for admission to the minor in animation, the applicant is required to submit the following materials: (1) Cinematic Arts departmental application, (2) academic records including current USC transcripts, (3) personal statement, (4) two letters of recommendation, and (5) portfolio (prints, slides, CD, DVD, film and/or video). Applications and admission information can be obtained from the USC School of Cinematic Arts, Animation and Digital Arts Program Office, (213) 740-3986 or online at cinema.usc.edu.

Grade Point Average Requirement

A minimum grade of C (2.0) in each course is required. A grade of C- (1.7) or lower does not fulfill a minor requirement.

Course Requirements

The following courses are to be taken in a prescribed sequential order. Twenty-four units are required.

COURSES		UNITS
CTAN 436	Writing for Animation	2
CTAN 448	Introduction to Film Graphics — Animation	4
CTAN 450abc	Animation Theory and Techniques	2-2-2
CTAN 451	History of Animation	2
CTAN 452	Introduction to 3-D Computer Animation	2, max 4
CTCS 190	Introduction to Cinema	4
CTPR 385	Colloquium: Motion Picture Production Techniques	4

Minor in Science Visualization

The minor in science visualization offers an introduction to science visualization methodology and practice focused in an area of relevant research. The minor is structured to provide the skills and knowledge needed in science visualization, and will culminate in a capstone project under the close supervision of faculty in both animation and science. The program requires 16 units. Most students will enter the minor in science visualization program in their sophomore year at USC.

Application Procedures

An undergraduate student at USC may apply to the minor in science visualization if he or she is in good standing and maintaining normal degree progress.

Students should apply after they have completed either CTAN 330 or CTAN 452 with a "B" or better in the course. A signature of support from the CTAN 330 or CTAN 452 professor is required. Applications and admission information can be obtained from the USC School of Cinematic Arts, Animation and Digital Arts Office SCB 210 (213) 740-3986.

Science visualization minor applications are reviewed by a panel of faculty members, with admissions made for the following fall semester only. A maximum of 12 students will be admitted per year.

Grade Point Average Requirement

A minimum grade of C (2.0) in each course is required. A grade of C- (1.7) or lower does not fulfill a minor requirement.

Course Requirements

The following courses are to be taken in the prescribed sequential order, starting with either CTAN 330 or CTAN 452 and finishing with CTAN 423L, the capstone class. Sixteen units of course work are required.

COURSES		UNITS
CTAN 330	Animation Fundamentals, or	2
CTAN 452	Introduction to 3-D Computer Animation	
FASC 436	Art and Technology	4
Four units from the following list:*		
CTAN 432	The World of Visual Effects	2
CTAN 443L**	Character Development for 3-D Animation and Games	2
CTAN 450a	Animation Theory and Techniques	2
CTAN 452	Introduction to 3-D Computer Animation	2
CTAN 455L	Organic Modeling for Animation	2
CTAN 462	Visual Effects	2
CTAN 464L**	Digital Lighting and Rendering	2
CTAN 465**	Digital Effects Animation	2
IML 400	Creative Coding for the Web	4
IML 420	New Media for Social Change	4

IML 422	Information Visualization	4
IML 466	Digital Studies Symposium	4
<i>*Junior or seniors with a 3.0 GPA in good standing may elect to take graduate courses CTAN 508L (2), CTAN 564L (2) and CTAN 565L (2). Prerequisite required.</i>		

Four units from the following list:

ANTH 300	Evolution, Ecology, and Culture	4
ANTH 406	Theory and Method in Biological Anthropology	4
ANTH 472	Visual Techniques in Anthropology: Stills	4
AHIS 373	History of Photography	4
AHIS 425	Interdisciplinary Studies in Classical Art and Archaeology: Research and Methodology	4
AHIS 429	Studies in Art, Science, and Technology	4
AHIS 477	Studies in Visual and Material Culture	4
BISC 307L**	General Physiology	4
BISC 419**	Environmental Microbiology	4
BISC 427**	The Global Environment	4
BISC 483**	Geobiology and Astrobiology	4
ENGL 375	Science Fiction	4
GEOL 425L	Data Analysis in the Earth and Environmental Sciences	4
GEOL 450L**	Geosystems	4
PSYC 420**	Animal Behavior	4

Two unit capstone course:

CTAN 423L	Principles of Digital Animation: Visualizing Science	2
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***Prerequisite required.*

Minor in Game Design

Game design is the next great design field, and individuals of many professions and skill sets will benefit from understanding how to design for interactivity and new technology. The game design minor teaches basic iterative design and prototyping skills while providing students the opportunity to explore design for new technologies and the skills of user assessment and usability testing.

To be eligible for the game design minor, a student must be in good academic standing and have a declared major. To declare the game design minor a student must get permission from the Interactive Media Division (SCA 222) and submit a Change of Major/Minor form to Cinematic Arts Student Services (SCB 105).

Course Requirements for the Minor

A total of 24 units is required for the game design minor, 6 lower-division units and 18 upper-division units.

LOWER-DIVISION CORE (6 UNITS)		UNITS
CTIN 101	Fundamentals of Procedural Media	2
CTIN 190	Introduction to Interactive Entertainment	4
UPPER-DIVISION CORE (12 UNITS)		UNITS
CTIN 483	Introduction to Game Development	4

CTIN 484*	Intermediate Game Development	2
CTIN 488	Game Design Workshop	4
CTIN 489*	Intermediate Game Design Workshop	2

ELECTIVES (6 ADDITIONAL UNITS)

		UNITS
CTIN 401L	Interface Design for Games	2
CTIN 404L	Usability Testing for Games	2
CTIN 405L	Design and Technology for Mobile Experiences	2
CTIN 458	Business and Management of Games	2
CTIN 464	Game Studies Seminar	2
CTIN 482	Designing Online Multiplayer Game Environments	2
CTIN 486	Immersive Design Workshop	2
CTIN 491L	Advanced Game Project I	4
CTIN 492L	Experimental Game Topics	4
CTIN 493L**	Advanced Game Project II	2

**CTIN 484 and CTIN 489 must be taken concurrently and require CTIN 483 and CTIN 488 as prerequisites.*

***Prerequisite required.*

Grade Point Average Requirement

A minimum grade of C (2.0) in each course is required.

A grade of C- (1.7) or lower does not fulfill a minor requirement.

Minor in Game Entrepreneurism

A minor for students interested in building a business in the games and digital media industry. Building on the business, production and management courses in the Interactive Media Division, this minor culminates in our advanced game project course and provides students with hands-on mentorship in starting actual companies based on the work they are doing in these concurrent classes. The minor provides a basis in theories of design and production for games, as well as a strong grounding in the business knowledge necessary to become an entrepreneur.

To be eligible for the game entrepreneurship minor, a student must be in good academic standing and have a declared major. To declare the game entrepreneurship minor a student must get permission from the Interactive Media Division (SCA 222), and submit a change of major/minor form to Cinematic Arts Student Services (SCB 105).

Course Requirements for the Minor

A minimum of 23 units is required for the game entrepreneurship minor, including 2 lower division units and a minimum of 17 upper division units.

LOWER-DIVISION CORE (2 UNITS)		UNITS
CTIN 101	Fundamentals of Procedural Media	2
UPPER-DIVISION CORE (17-18 UNITS)		UNITS
BAEP 450x	Fundamentals of Entrepreneurship (4), or	
BAEP 451	The Management of New Enterprises (4), or	
BUAD 301	Technical Entrepreneurship (3)	3-4
BAEP 452**	Feasibility Analysis	4

CTIN 458	Business and Management of Games	2
CTIN 488	Game Design Workshop	4
CTIN 491L	Advanced Game Project I	4

ELECTIVES (4 ADDITIONAL UNITS)

		UNITS
BAEP 423	Management of Small Businesses	4
BAEP 460	Seminar in Entrepreneurship	2
BAEP 470	The Entrepreneurial Mindset — Taking The Leap	2
CTIN 110	Statistical Analysis for Games: Storytelling with Numbers	4
CTIN 404L	Usability Testing for Games	2
CTIN 405L	Design and Technology for Mobile Experiences	2
CTIN 459L**	Game Industry Workshop	4
CTIN 463	Anatomy of a Game	4
CTIN 482	Designing Online Multiplayer Game Environments	2
CTIN 486	Immersive Design Workshop	2
CTIN 493L	Advanced Game Project II	2
CTIN 497ab*	Interactive Media Startup	1-1

**CTIN 497a requires concurrent enrollment in CTIN 491L.*

***Prerequisite required.*

Grade Point Average Requirement

A minimum grade of C (2.0) in each course is required.

A grade of C- (1.7) or lower does not fulfill a minor requirement.

Minor in Game Animation

To create animations for a game requires an understanding that visual art forms one part of a game system or algorithm, and even animation poses and rigging must often be thought of in terms of programming-like logic. The skills of the modern animator, visual effects artist, motion capture professional and many others are of great value in the games industry, but very few of these professionals have both training in visual artistry and the systemic thinking necessary for game design. This minor provides an educational path that teaches both systems thinking and the skills and creativity of an animator.

To be eligible for the game animation minor, a student must be in good academic standing and have a declared major. To declare the game animation minor a student must get permission from the Interactive Media Division (SCA 222) and submit a Change of Major/Minor form to Cinematic Arts Student Services (SCB 105).

Course Requirements for the Minor

A total of 24 units is required for the game animation minor, including a minimum of 16 upper-division units.

CORE REQUIREMENTS		UNITS
CTAN 451	History of Animation, or	
CTIN 101	Fundamentals of Procedural Media	2
CTAN 330	Animation Fundamentals	2
CTAN 452	Introduction to 3-D Computer Animation	2
CTAN 464L*	Digital Lighting and Rendering	2
CTIN 483	Introduction to Game Development	4
CTIN 488	Game Design Workshop	4

CTAN 432	The World of Visual Effects, or	
CTIN 332	Games for Animation	2

ELECTIVES (6 ADDITIONAL UNITS)	UNITS
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CTAN 420	Concept Design for Animation	2
CTAN 432**	The World of Visual Effects	2
CTAN 451**	History of Animation	2
CTAN 460	Character Design Workshop	2
CTAN 462	Visual Effects	2
CTAN 465L*	Digital Effects Animation	2
CTAN 564L*+	Motion Capture Fundamentals	2
CTAN 565L*+	Motion Capture Performance	2
CTIN 101**	Fundamentals of Procedural Media	2
CTIN 190	Introduction to Interactive Entertainment	4
CTIN 332**	Games for Animation	2
CTIN 484L***	Intermediate Game Development	2
CTIN 489***	Intermediate Game Design Workshop	2
CTIN 491L	Advanced Game Project I	4
CTIN 493L*	Advanced Game Project II	2

*Prerequisite required.

**CTAN 432, CTAN 451, CTIN 101, and CTIN 332 may only be taken as electives if they are not used to fulfill a core requirement for the minor.

***CTIN 484 and CTIN 489 must be taken concurrently, and require CTIN 483 and CTIN 488 as prerequisites.

+Enrollment in CTAN 564 and CTAN 565 requires special permission.

Grade Point Average Requirement

A minimum grade of C (2.0) in each course is required. A grade of C- (1.7) or lower does not fulfill a minor requirement.

Minor in Game Audio

To implement audio into a game requires an understanding that audio forms one part of a game system or algorithm, and even composition must often be thought of in terms of programming-like logic. Game audio professionals must not only be competent in one area (e.g., expressly in music composing, or in audio recording), but in other areas of audio as well. This minor provides a grounding in game design and systems thinking, while providing a theoretical backing and skills in audio design and composition to prepare students to design successful audio for the games industry.

To be eligible for the game audio minor, a student must be in good academic standing and have a declared major. To declare the game audio minor a student must get permission from the Interactive Media Division (SCA 222) and submit a Change of Major/Minor form to Cinematic Arts Student Services (SCB 105).

Course Requirements for the Minor

A minimum of 24 units is required for the game audio minor, 6 lower-division units and a minimum of 16 upper-division units.

LOWER-DIVISION CORE UNITS (6 UNITS)	UNITS
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CTIN 101	Fundamentals of Procedural Media	2
MUIN 277x	Introduction to Music Technology	4

UPPER-DIVISION CORE UNITS (12 UNITS)	UNITS
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CTIN 406L	Sound Design for Games	2
CTIN 444	Audio Expression	2
CTIN 488	Game Design Workshop	4
CTIN 491L	Advanced Game Project I	4

ELECTIVES (MINIMUM 6 ADDITIONAL UNITS, AT LEAST 4 UPPER-DIVISION)	UNITS
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CTIN 483	Introduction to Game Development	4
CTIN 484L*	Intermediate Game Development	2
CTIN 486	Immersive Design Workshop	2
CTIN 489*	Intermediate Game Design Workshop	2
CTIN 492L	Experimental Game Topics	4
CTIN 493L**	Advanced Game Project II	2
CTPR 473	Directing the Composer	2
MTEC 310	Computer Recording for the Performing Musician	2
MUCO 221a	Composition for Non-Majors	2
MUEA 474a	Electronic Synthesizer Techniques	2
MUIN 305	MIDI and Computer Music Production	4
MUIN 446a	Computer Assisted Recording and Editing	2
MUIN 478**	Advanced Multichannel Remix	2
THTR 336	Introduction to Sound Design	3

*CTIN 484 and CTIN 489 must be taken concurrently, and require CTIN 483 and CTIN 488 as prerequisites.

**Prerequisite required.

Grade Point Average Requirement

A minimum grade of C (2.0) in each course is required. A grade of C- (1.7) or lower does not fulfill a minor requirement.

Minor in Screenwriting

The minor in screenwriting is designed to train students in the creatively challenging field of writing for screen and television. Students learn the fundamentals of writing for film and television with the opportunity to specialize in writing feature length screenplays, teleplays in both drama and comedy, or analysis of the craft of screenwriting.

Application Procedures

To apply to the minor in screenwriting, a student must be in good academic standing, have a declared major, and be currently enrolled in or have completed with a passing grade CTWR 412 Introduction to Screenwriting. Applications and information can be obtained at the Writing Division office, SCA 335, (213) 740-3303 and online at cinema.usc.edu.

Course Requirements for the Minor

The minor in screenwriting is a specialized course of study for students who desire a solid foundation in the craft of screenwriting. A total of 16 units is required to complete the screenwriting minor, 8 units from four fundamental courses and 8 units of electives.

FUNDAMENTALS AND FEATURE DEVELOPMENT (8 UNITS)	UNITS
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CTWR 321	Introduction to Television Writing	2
CTWR 412	Introduction to Screenwriting	2
CTWR 415a	Advanced Writing	2
CTWR 416	Motion Picture Script Analysis	2
		8

ADDITIONAL ELECTIVES (8 UNITS)	UNITS
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CTWR 404	Foundations of Comedy	2
CTWR 410L	Character Development and Storytelling for Games	4
CTWR 411	Television Script Analysis	2
CTWR 415b	Advanced Writing	4
CTWR 417	Script Coverage and Story Analysis	2
CTWR 421	Writing the Hour-Long Dramatic Series	2, max 4
CTWR 422	Creating the Dramatic Television Series	2, max 4
CTWR 430	The Writer in American Cinema and Television	2
CTWR 431	Screenwriters and Their Work	2, max 6
CTWR 433	Adaptations: Transferring Existing Work to the Screen	2
CTWR 434	Writing the Half-Hour Comedy Series	2, max 6
CTWR 435	Writing for Film and Television Genres	2-4, max 8
CTWR 437	Writing the Original Situation Comedy Pilot	4, max 8
CTWR 439	Writing the Original Dramatic Series Pilot	4, max 8
CTWR 441	Writing Workshop in Creativity and Imagination	2
CTWR 453	Advanced Feature Rewriting	4
CTWR 459ab	Entertainment Industry Seminar	2-2
CTWR 468	Screenwriting in Collaboration	4, max 8
CTWR 499	Special Topics	2-4, max 8

Grade Point Averages

A minimum grade of C (2.0) in each course is required. A grade of C- (1.7) or lower does not fulfill a minor requirement.

Graduate Courses

Students may not apply more than 16 units of graduate level course work toward their university degree.

Minor in Digital Studies

The minor in digital studies explores the intersections of digital media across both professional and academic disciplines. Learning the dynamic potential of a broad array of tools and technologies, students create innovative projects, from photo essays to Web-based documentaries, from interactive videos to sophisticated Websites, and from typography in motion to 3-D visualizations. For more information and course requirements see the Institute for Multimedia Literacy, page 224xx.

Minor in Cinema-Television for the Health Professions

This 24-unit minor is designed for students who plan to enter careers or professional programs in medicine after graduation and are interested in working with film and television producers to disseminate accurate health information to the public. See the Keck School of Medicine of USC, page 793xx, for course requirements.

Minor in 2-D Art for Games

This interdisciplinary minor integrates three major disciplines (fine arts, computer science and interactive media) to develop the 2-D visual skills necessary to conceptualize and illustrate images for games. For more information, see USC Roski School of Fine Arts, page 690xx.

Minor in 3-D Art for Games

The focus of the 3-D Art for Games minor is a trans-disciplinary approach that incorporates the creative, technological and team-based communication skills necessary to develop 3-D art skills for video games. For more information, see USC Roski School of Fine Arts, page 690xx.

Minor in 3-D Animation

The 3-D animation minor merges theoretical concepts and practical skills, to prepare students for a career in their major field of work with incorporation of 3-D animation and interactive technologies. Through integration of three major disciplines (cinematic arts, fine arts and information technology), students gain a solid foundation in a wide range of important industry and academic skills. See the Information Technology Program, page 671xx, for course requirements.

Minor in Video Game Design and Management

The video game design minor integrates theoretical concepts and practical skills to prepare students for a career in interactive entertainment, specifically the video game industry. Through integration of two major disciplines (cinematic arts and information technology), students will be exposed to a variety of design concepts related to creating video games. See the Information Technology Program, page 672xx, for course requirements. For specific information on admission and application procedures, contact the School of Cinematic Arts at (213) 821-2515 or the Information Technology Program at (213) 740-4542.

Minor in Performing Arts Studies

The minor in Performing Arts provides an interdisciplinary inquiry into the nature and aesthetics of the performing arts. It combines the disciplines of cinematic arts, dance, music and theatre. The minor is a unique course of study that looks at how the performing arts contribute to a culturally literate society. See USC School of Dramatic Arts, page 943xx, for requirements.

Animation and Digital Arts

John C. Hench Animation and Digital Arts offers a fall semester abroad at Studio Art Centers International (SACI) in Florence, Italy. B.A. students will be required to take equivalent classes in animation and digital media while also benefiting from the wide range of liberal arts courses offered at SACI.

International Programs

Animation and Digital Arts

John C. Hench Animation and Digital Arts offers a fall semester abroad at Studio Art Centers International (SACI) in Florence, Italy. B.A. students will be required to take equivalent classes in animation and digital media while also benefiting from the wide range of liberal arts courses offered at SACI.

Global Exchange Workshop

"Documenting the Global City: Los Angeles and Beijing," is an intensive, seven-week workshop in documentary filming that pairs graduate students from the USC School of Cinematic Arts and the Communication University of China (CUC) to make short documentaries on Los Angeles or Beijing as global cities. The program is held in Los Angeles or Beijing in alternate years, and in summer 2012 will be held in Beijing. Participating students enroll in CTPR 515 Global Exchange Workshop (2 units).

With faculty guidance from both universities, the students must negotiate cultural differences both in front of and behind the camera. In the process, both students and faculty directly experience the other culture and learn how it defines globalism in general, sees its own city in global terms, combines theory and practice, and processes a new set of perceptions and lived experience.

Interested students should contact Professor Mark Harris of the division of Film and Video Production at (213) 740-3319, or at mharris@cinema.usc.edu. Airfare to China and lodging expenses in Beijing are provided for all students accepted into the course.

Courses of Instruction

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

Note: Instructor availability for a particular course or section cannot be guaranteed.

CINEMA-TELEVISION (CNTV)

CNTV 101 Reality Starts Here (2, Fa) Introduction to emerging forms of immersive entertainment, to Cinematic Arts faculty, and to guest speakers who will comment on the changing nature of the industry. Open only to School of Cinematic Arts students. Graded CR/NC.

CNTV 325 Film and Digital Cinematography (3, Sm)

The craft of cinematography for film and digital media; includes lectures, on-set film and video production exercises, and scene studies.

CNTV 367 The Music Video: Business and Practice (4, Sm)

Creating concepts, writing treatments, pitching, and the realities and details of music video production including budgeting, pre- and post-production. (Duplicates credit in CTPR 497 Music Video Production.)

CNTV 370 3-D Animation for Film and Video (4, Sm)

The basics of 3-D computer animation techniques and their use in creating animated characters.

CNTV 372 Developing the Screenplay (2, Sm) The process of script development, examining a project from the initial idea and tracking its progress through to the completed screenplay ready for production.

CNTV 375 Breaking Into the Film Industry (2, Sm)

An overview of the entertainment industry and the tools needed to secure jobs and survive and succeed in the market.

CNTV 390 Special Problems (1-4, Irregular) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

CNTV 392 Beginning Digital Filmmaking (4, Sm)

The basic technical and aesthetic concepts underlying motion picture production and an exploration of visual language.

CNTV 393 16mm Filmmaking: Structuring Scenes That Work (4, Sm)

The creative and technical aspects of 16mm filmmaking, particularly as they apply to the short film or the individual scene.

CNTV 405 Studio Producing and Directing (4, Sm)

Understanding the craft and art of directing in the studio system, and developing a working methodology for creative producing.

CNTV 410 Non-Fiction Filmmaking (4, Sm)

Conceiving, researching, writing, producing, directing, and editing an original non-fiction work and exploring practical training in techniques of non-fiction film.

CNTV 411 Directing Intensive (4, Sm)

An overview of the concerns, functions and responsibilities of the director. The core of the course is casting, producing and directing an individual project.

CNTV 413 Digital Editing (4, Sm)

Introduction to non-linear editing techniques, hardware, digitizing, logging, and special effects, using the AVID Media Composer editing system.

CNTV 415 Commercial Production: The Art of the Sixty-Second Story (4, Sm)

The three main components of commercials: agency creation, spot production, and post-production. Writing, pitching, casting, directing, and editing commercials.

CNTV 419 Inside the Business of Film and Television (4, FaSpSm)

An overview of the contemporary studio system, independent films, and television, including script analysis, pitching, optioning properties, the marketplace, representation, career management, and networking.

CNTV 420 Independent Feature Filmmaking (2, FaSpSm)

Independent feature film development, financing, production, and distribution. Discussions with independent filmmakers.

CNTV 463 Television: Integrating Creative and Business Objectives (2, Fa) An investigation of the creative and business sides of television and how they connect, including changes caused by fractionalization and digital technology. Open only to Business Administration (Cinematic Arts) students.

CNTV 467 The Future of Digital Media and the Entertainment Industry (2, Sp) Examines how digital media will affect the future of the television, motion picture, game, music, and interactive industries. Open only to Business Administration (Cinematic Arts) students.

CNTV 490x Directed Research (1–8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

CNTV 495 Internship in Cinematic Arts (1, 2, or 4, max 4, FaSpSm) On-the-job film, television, and interactive industry experience in the areas of interest of the individual student. Requires departmental approval. (Duplicates credit in former CTIN 495 and former CTPR 495.)

CNTV 499 Special Topics (2–4, max 8) Selected topics in cinematic arts.

CNTV 501 Cinematic Arts Seminar (1, max 4, Fa) Introduction to an industry and art form in the midst of transformation, with guest speakers and cinematic arts faculty who will address new research and technologies. Graded CR/NC.

CNTV 521 The World of the Producer (4, FaSp) A comprehensive overview of the role of the producer in creating television programming, feature films, and new media content.

CNTV 522 The Television Industry: Networks, Cable and the Internet (4, FaSp) The current state of the television industry and future business paradigms.

CNTV 523 Feature Film Financing and the Studio System (4, FaSp) An overview of the motion picture studio system and how to finance feature films. Principles, business practices, and future trends.

CNTV 524 Digital Technologies and the Entertainment Industry (4, FaSp) The impact of digital technologies on the film, television, and music industries from content creation to distribution.

CNTV 525 Entertainment Marketing in Today's Environment (4, FaSp) Entertainment industry marketing disciplines, covering motion pictures, television, music, theme parks, home entertainment, and video games. Current principles and business practices.

CNTV 589 Graduate Film Seminar (2 or 4, max 8, FaSp) Detailed investigations and discussion of various aspects of film.

CNTV 590 Directed Research (1–12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

CNTV 594abz Master's Thesis (2–2-0, FaSpSm) Credit on acceptance of thesis. Graded IP/CR/NC.

CNTV 599 Special Topics (2–4, max 8, FaSp) Detailed investigation of new or emerging aspects of cinematic arts; special subjects offered by visiting faculty; experimental subjects.

CNTV 600 Historical Approaches to Media Arts and Culture (4, FaSp) Introduction to the historical specificities of "old" media (painting, print, photography, film, video, television) and to consequences of the convergences produced by "new" media forms.

CNTV 601 Seminar in Media and Design Studies (4, FaSp) Creation of a work of digital culture, informed by cultural theory, and planned using current design methods and practices.

CNTV 602 Practice of Media Arts (4, max 8, FaSp) Introduction to a range of technologies and media types, while identifying and developing a specialization in one or more areas of practice.

CNTV 603 Media Arts and Practice Colloquium/Professional Seminar (1, max 2, FaSp) Orientation to the profession, opportunities, presentation and analysis of recent developments and applications in Media Arts and Practice. Graded CR/NC.

CNTV 604 Theories of Media Arts and Practice (4, FaSp) Develops an anti-essentialist theory of technology adequate to the digital age that serves as a conceptual and critical framework for developing a contemporary technological imagination.

CNTV 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC.

ANIMATION (CTAN)

CTAN 101 Introduction to the Art of Animation (2, Fa) Theory and practice of graphic imagery in all its ramifications with emphasis on self exploration. Open to freshman animation majors only.

CTAN 102 Introduction to the Art of Movement (2, Sp) Theory and practice of graphic imagery using short animation projects including Zoetrope, drawing, painting and flipbooks. Emphasis on the frame by frame/frame to frame relationships. Open to freshman animation majors only. *Prerequisite:* CTAN 101.

CTAN 201 Introduction to Animation Techniques (3, Fa) Theory and practice of analog frame by frame time based media. Exploration and examination of ideas generated in the creation of animated media. Open to sophomore animation majors only. *Prerequisite:* CTAN 102.

CTAN 202 Advanced Animation Techniques (3, Sp) Examination of representational aspects of animation generated through character using short animated projects. Open to sophomore animation majors only. *Prerequisite:* CTAN 201.

CTAN 301 Introduction to Digital Animation (3, Fa) The fundamental principles of working in 2-D digital software with an emphasis on animation, story, sound, timing and execution. Open to junior animation majors only. *Prerequisite:* CTAN 202.

CTAN 302 Introduction to 3-D Computer and Character Animation (3, Sp) The fundamental principles of working in 3-D computer software with an emphasis on animation, performance, lip-syncing, timing and execution. Open to junior animation majors only. *Prerequisite:* CTAN 301.

CTAN 305 Professionalism of Animation (2, FaSp) Understanding the business of the animation industry. Developing presentation skills for interviewing and pitching, preparing personal marketing tools, researching employment opportunities, and practicing networking techniques. Open only to Animation and Digital Arts majors.

CTAN 330 Animation Fundamentals (2, Sp) An introduction to the fundamentals of animation, covering such topics as timing, anticipation, reaction, overlapping action, and metamorphosis.

CTAN 336 Ideation and Pre-Production (2, Sp) Emphasis on lateral thinking working across boundaries to find underlying principles in terms of ideation: the act of becoming an agent of ideas. Open to junior animation majors only.

CTAN 401ab Senior Project (4, 4, FaSp) *a.* Understanding the requirements and relationships between theory and practice regarding the complexity of an animated film in idea and execution. *b.* Completion and exhibition of the short animated film to demonstrate understanding and further examination of the possibilities of animation time based graphic media. Open to senior animation majors only. *Prerequisite:* CTAN 302, CTAN 336.

CTAN 420 Concept Design for Animation (2, FaSp) Creating characters and environments for animation, live action, and video games.

CTAN 423L Principles of Digital Animation: Visualizing Science (2, FaSp) Principles of 2-D and 3-D digital animation applied to scientific themes and research topics. (Duplicates credit in former CTAN 523.)

CTAN 430 The Rise of Digital Hollywood (2, FaSp) An overview of the evolution of computer graphics in modern media. Lectures, screenings, and guest speakers.

CTAN 432 The World of Visual Effects (2, FaSpSm) Introduction to the expanding field of visual effects; topics include integration for cinematic storytelling and the study of digital productions employing the latest visual effects.

CTAN 435 Story Art Development (2, FaSp) Using basic storyboarding techniques to develop a sense of character, plot, and continuity. Technical aspects of developing ideas into films.

CTAN 436 Writing for Animation (2, Fa) Workshop exploring concept and structure of long and short form animated films through practical writing exercises.

CTAN 443L Character Development for 3-D Animation and Games (2, max 4, FaSpSm) Development, modeling, and animation with an emphasis on character setup features: rigging, skeletons, deformers, and scripting. Applying principles of traditional animation to 3-D character rig/puppet. *Prerequisite:* CTAN 452.

CTAN 448 Introduction to Film Graphics — Animation (4, FaSp) An introduction to methods for creating analog animation through experimentation with imagery, concepts and materials. Emphasis on basic timing principles and hands-on techniques.

CTAN 450abc Animation Theory and Techniques (2-2-2, FaSp) *a:* Methods for creating animation blending traditional techniques with contemporary technologies; *b:* instruction in methods for planning and executing a short animated film. Topics covered include storyboarding, visual development and production planning; *c:* practical completion of a short animated film.

CTAN 451 History of Animation (2, Fa) In-depth survey of historical developments, styles, techniques, theory and criticism of animation as an art form.

CTAN 452 Introduction to 3-D Computer Animation (2, max 4, FaSp) Lecture and laboratory in computer animation: geometric modeling, motion specification, lighting, texture mapping, rendering, compositing, production techniques, systems for computer-synthesized animation.

CTAN 455L Organic Modeling for Animation (2, FaSp) The art of digital sculpting for animated characters, with visual effects integration. *Recommended preparation:* CTAN 452 or CTAN 462.

CTAN 460 Character Design Workshop (2, Sp) The basics of character design for animation: anatomy, poses, facial expressions, silhouettes, and anthropomorphism. Development of a portfolio.

CTAN 462 Visual Effects (2, FaSp) Survey of contemporary concepts and approaches to production in the current state of film and video effects work. Digital and traditional methodologies will be covered, with a concentration on digital exercises illustrating modern techniques.

CTAN 463L Creative Workflow in Visual Effects (2, FaSp) Spherical panoramic photography, 3-D digital environment techniques and a range of visual effects work while providing the stage for the student's storytelling. *Prerequisite:* CTAN 462.

CTAN 464L Digital Lighting and Rendering (2, FaSp) Concepts, tools and techniques used to create cinematic lighting and rendering in computer-generated imagery (CGI). *Prerequisite:* CTAN 452 or CTAN 462.

CTAN 465L Digital Effects Animation (2, FaSp) All aspects of digital effects animation, including particles, dynamics, and fluids. Creating water, fire, explosions, and destruction in film. *Prerequisite:* CTAN 452 or CTAN 462.

CTAN 470 Documentary Animation Production (2, FaSp) Examination of the history, techniques, and methods of documentary animation production. Collaboration on a short film project.

CTAN 495 Visual Music (2, Fa) Experimental animation providing the opportunity to produce individual or group projects. Focus is non-conventional techniques for image creation and collaboration between composer and visual artist. Not open to freshmen and sophomores.

CTAN 496 Directed Studies (2, max 4, FaSp) Individual research under faculty guidance. Open to animation majors only.

CTAN 499 Special Topics (2-4, max 8, FaSpSm) Detailed investigation of new or emerging aspects of cinema and/or television; special subjects offered by visiting faculty; experimental subjects.

CTAN 501 Experiments in 2-D Digital Animation (2, FaSp) 2-D Digital animation exploring the art form as a fertile terrain for experimentation, exhibition and activism. *Recommended preparation:* 2-D digital experience.

CTAN 502ab Experiments in Stereoscopic Imaging (2, Fa; 2, Sp) *a:* An in-depth exploration of aesthetics and techniques involved in the conceptualization, design and creation of stereoscopic imaging. *b:* Review of techniques and aesthetic issues pertinent to immersive virtual reality and stereoscopic animation. Students realize an original project proposed in CTAN 502a.

CTAN 503 Storyboarding for Animation (2, Sp) Focus on film grammar, perspective, and layout, staging and acting as it relates to storyboarding for animation.

CTAN 505 The Business of Animation (2, Sp) Professional knowledge and application of fundamental business skills associated with working in the animation industry, academia or the arts.

CTAN 508L Live Action Integration with Visual Effects (2, Sp) Survey of the digital techniques required to successfully marry live action shooting with CGI elements and green screen footage. *Prerequisite:* CTAN 462.

CTAN 522 Animation Department Seminar (1, max 6, FaSp) A weekly seminar required of all MFA Animation students. This course includes guest speakers, faculty and student presentations followed by lively and critical discussion. Graded CR/NC.

CTAN 524 Contemporary Topics in Animation and Digital Arts (2, FaSp) Topics exploring the evolution of the brain, development of art, technology, science and culture. How this correlates to the evolution of animation-digital media.

CTAN 525 Gesture Movement for Animation (2, FaSp) The concepts of animation performance, body and facial gesture, and the emotional and psychological resonance through cinematic arts.

CTAN 536 Storytelling for Animation (2, Sp) Storytelling workshop for animators; application of dramatic techniques to visual concepts to derive three-dimensional stories which can serve as bases for finished films. Open only to Cinematic Arts students. (Duplicates credit in CTAN 436.)

CTAN 544 Introduction to the Art of Animation (3, Fa) Fundamentals of film, video and computer animation production. Orientation to assist students on determining future emphases and specialties. Open only to MFA Animation students.

CTAN 547 Animation Production I (3, Sp) Practicum in film, video and computer animation emphasizing the production process through individual projects. Open only to MFA Animation students. *Prerequisite:* CTAN 544.

CTAN 550 Stop Motion Puppet and Set Design (2, Fa) Puppet and set design for stop motion animation while providing guidance on armature rigs that allow the character to be animated effectively.

CTAN 551 Stop Motion Performance (2, Sp) Incorporating classic stop motion techniques for puppet performance and animation. Emphasis on timing, performance, movement, animation and gesture. *Prerequisite:* CTAN 550.

CTAN 555 Animation Design and Production (4, Fa) Exploring creative strategies to designing form and content. Developing style and investigating multiple techniques, including live action and sound. Production of a 30–60 second work. Open only to CTAN MFA students. *Prerequisite:* CTAN 547.

CTAN 563 Advanced Computer Animation (2, Irregular) Investigation of advanced computer techniques related to character representation and various types of algorithmically defined animation produced on either film or videotape. *Prerequisite:* CTAN 443L.

CTAN 564L Motion Capture Fundamentals (2, Fa) Fundamental principles of motion capture technology explored while working through a structured series of assignments based around performance, gesture and motion. *Prerequisite:* CTAN 452 or CTAN 462.

CTAN 565L Motion Capture Performance (2, Sp) The art of directing, acting, and creating story for motion capture will be explored while learning the technology behind bringing virtual actors to life. *Prerequisite:* CTAN 564.

CTAN 576 Seminar in Film/Television and New Technologies (4, Sp) Focus on film's relationship to general technological developments, what it owes to technologies that preceded it, how it continues to develop in relation to emerging technologies and how it influences the shape of these newer technologies.

CTAN 577ab Fundamentals of Animation (a: 2, Fa; b: 2, Sp) The exploration of the techniques of the art of character animation with an emphasis on discipline, performance and personality observation, specializing in classical Hollywood animation. Open only to MFA Animation students.

CTAN 579 Expanded Animation (2, Sp) Incorporation of traditional image making methods as well as digital and new media technologies to convey non-linear narratives over internal and external landscapes. Open only to MFA Animation and Digital Arts students.

CTAN 582 Basic Animation Production Technologies (2, Fa) Introduction for animation majors to the basic techniques and processes of film, video and computer systems, including cinematography, editing and sound. Open only to MFA animation and digital arts students. (Duplicates credit in former CTAN 482.)

CTAN 591 Animation Pre-Thesis Seminar (2, Sp) A pre-production seminar, where students complete the research, development, script and storyboards for their thesis project to be executed in CTAN 594abz. Open to MFA Animation students only.

CTAN 592 Master Class (2-6, max 12, Fa) A special projects course in which students produce a major work through weekly meetings with a master artist/ animator. Topics must be approved prior to enrollment. *Recommended preparation:* previous advanced animation production experience.

CTAN 593 Directed Studies in Animation (2, max 4, FaSp) Individual exploration in the areas of contemporary technology, animation techniques or experimental film through internships, residencies or directed studies.

CTAN 594abz Master's Thesis (2-2-0) Credit on acceptance of thesis. Graded IP/CR/NC.

CTAN 599 Special Topics (2-4, max 8, Irregular) Detailed investigation of new or emerging aspects of cinema; special subjects offered by visiting faculty; experimental subjects.

CRITICAL STUDIES (CTCS)

CTCS 190 Introduction to Cinema (4, FaSp) Gateway to the majors and minors in cinematic arts. Technique, aesthetics, criticism, and social implications of cinema. Lectures accompanied by screenings of appropriate films.

CTCS 191 Introduction to Television and Video (4, FaSp) Exploration of the economic, technological, aesthetic, and ideological characteristics of the television medium; study of historical development of television and video including analysis of key works; introduction to TV/video theory and criticism.

CTCS 192m Race, Class, and Gender in American Film (4, Sp) Analyzes issues of race, class and gender in contemporary American culture as represented in the cinema.

CTCS 200 History of the International Cinema I (4, Fa) The development of international cinema from its beginnings to World War II. Lectures, screenings, and discussions.

CTCS 201 History of the International Cinema II (4, Sp) The development of international cinema from World War II to the present. Lectures, screenings, and discussions.

CTCS 303 Japanese Anime (2) Explores the visual, dramatic and social conventions of Japanese animation in film and television. Examines anime fan communities, manga and their impact.

CTCS 306 Research Practice Seminar (2, max 4) Theories and case studies of contemporary issues in film, television and digital media research. Students will be required to design their own undergraduate research projects. Not open to freshmen.

CTCS 367 Global Television and Media (4, Irregular) Studies in the global configurations of television industries and cultures, including new technologies and the textual and sociological analysis of global media events and programming.

CTCS 373 Literature and Film (4) (Enroll in COLT 373)

CTCS 379 Nationalism and Postcolonialism in Southeast Asian Cinema (4) (Enroll in COLT 379)

CTCS 392 History of the American Film, 1925-1950 (4, Sp) Screenings of American film classics and their relationship to society. Lectures and discussions.

CTCS 393 History of the American Film, 1946-1975 (4, Fa) Cinematic and extra-cinematic determinants of Post-Classical and Modernist Hollywood studio and independent genres, styles, and the star-phenomenon and their relationship to American history and culture.

CTCS 394 History of the American Film, 1977-present (4, Sp) Cinematic and extra-cinematic determinants of Postmodernist Hollywood studio and independent genres, styles, and the star-phenomenon and their relationship to American history and culture.

CTCS 400 Non-Fiction Film and Television (4, Fa) An international survey of documentary, informational, and independent experimental film, video and television.

CTCS 402 Practicum in Film/Television Criticism (4, max 8, FaSp) Exercise in writing film and television criticism using new and classic films and television programs.

CTCS 403 Studies in National and Regional Media (4, max 8, FaSp) Detailed investigation of traditions, achievements, and trends of film and/or electronic media in a particular country or region.

CTCS 404 Television Criticism and Theory (4, Sp) The evaluation of television programs and their reception from various theoretical perspectives which may include cultural studies, race and ethnic studies, psychoanalysis, gender and queer studies, and semiotics.

CTCS 406 History of American Television (4, Fa) History of television as an entertainment, information, and art medium. Emphasis on programming and institutional history, including issues of regulation, censorship, aesthetics and activism.

CTCS 407 African American Cinema (4, Irregular) Intensive survey of African American cinema; topics include history, criticism, politics, and cinema's relationship to other artifacts of African American culture.

CTCS 408 Contemporary Political Film and Video (4) Examination of a variety of politically engaged films and videotapes recently produced in the U.S. and abroad, with particular emphasis on aesthetic strategies.

CTCS 409 Censorship in Cinema (4, Fa) An inquiry into the practice and patterns of censorship in cinema.

CTCS 411 Film, Television and Cultural Studies (4, max 8, FaSp) Detailed examination of film/television from the perspectives and insights of Cultural Studies; focus on the production and reception of cultural texts, practices, and communities.

CTCS 412 Gender, Sexuality and Media (4, max 8, FaSp) Examines how gender and sexuality are figured in cinema and television with an emphasis on the development of feminist media theory.

CTCS 414 Latina/o Screen Cultures (4, FaSpSm) Examination of Latino/a moving image production including film, video, and digital media in the context of the politics of race, class, gender, sexuality, and international relations.

CTCS 462 Critical Theory and Analysis of Games (4, FaSp) (Enroll in CTIN 462)

CTCS 464 Film and/or Television Genres (4, max 8, FaSpSm) Rigorous examination of film and/or television genres: history, aesthetics, cultural context, social significance, and critical methodologies.

CTCS 466 Theatrical Film Symposium (4, max 8, FaSp) Lectures and readings on creative problems in the motion picture industry; current films; interviews with visiting producers, directors, writers, performers.

CTCS 467 Television Symposium (4, max 8) Lectures and readings on creative problems in the television industry; study of current and historical trends, interviews with producers, directors, writers and performers.

CTCS 469 Film and/or Television Style Analysis (4, max 8, FaSpSm) Intensive study of the style of an auteur, studio, film or television making mode in terms of thematic and formal properties and their influences upon the art of film.

CTCS 473 Film Theories (4, FaSp) Influential ideas and theoretical approaches that have shaped the making and study of film. Students are encouraged to take this course in their junior year. *Prerequisite:* CTCS 190.

CTCS 478 Culture, Technology and Communications (4, FaSp) Cultural study of communications technology and its relationship to society. Evaluation of the social and cultural impact of technologies from the telegraph to the Internet.

CTCS 482 Transmedia Entertainment (4, FaSp) An examination of transmedia, or cross-platform, entertainment: commercial and grassroots texts, theoretical framework, historical context, and commercial projects. Developing transmedia strategies for existing media properties.

CTCS 494 Advanced Critical Studies Seminar (4, max 8, FaSp) Rotating topics involving detailed study of the historical, cultural and aesthetic analysis of film, television, and new media technologies. Not open to freshmen.

CTCS 495 Honors Seminar (4, Sp) Advanced work in the historical, cultural and aesthetic analysis of film, television, and new media technologies. Open only to students in the CTCS Honors program. *Prerequisite:* CTCS 473.

CTCS 499 Special Topics (2–4, max 8, FaSpSm) Detailed investigation of new or emerging aspects of cinema and/or television; special subjects offered by visiting faculty; experimental subjects.

CTCS 500 Seminar in Film Theory (4, Fa) Introduction to classical and contemporary film theory; exploration of their relationship to filmic experimentation.

CTCS 501 History of Global Cinema Before World War II (2, Sp) Historical survey of global cinema from its beginnings until the advent of World War II.

CTCS 502 History of Global Cinema After World War II (2, Fa) Historical survey of film from a global perspective from the beginning of World War II until the present.

CTCS 503 Survey History of the United States Sound Film (2, Sp) Survey history of the United States film from 1927 to the present, with emphasis upon film as art form, economic institution, technology, and cultural product.

CTCS 504 Survey of Television History (2, Sp) An exploration of the historical, cultural, business, creative, and technological aspects of television.

CTCS 505 Survey of Interactive Media (2, Fa) A survey course exploring the historical, cultural, business, creative and technological aspects of the new interactive media.

CTCS 506 Critical Studies Colloquium/Professional Seminar (1, FaSpSm) Provides orientation to the profession, opportunities for academic and professional growth and development. Recommended for entering students.

CTCS 510 Case Studies in National Media and/or Regional Media (4, max 12, FaSp) Seminar on media's impact in defining nation and/or region in specific cultural contexts. Also addresses issues of exile, diaspora, transnationalism and globalism.

CTCS 511 Seminar: Non-Fiction Film/Video (4, Sp) Aesthetic, rhetorical, and ideological issues in non-fiction film and video.

CTCS 517 Introductory Concepts in Cultural Studies (4, Fa) Introduction to central concepts, key theories, and/or leading figures in cultural studies, particularly as they relate to issues of popular culture and visual media.

CTCS 518 Seminar: Avant-Garde Film/Video (4, Irregular) Aesthetic, historical and ideological issues in avant-garde film and video.

CTCS 564 Seminar in Film and Television Genres (4, max 8, FaSp) Advanced study of a selected genre of film and/or television — its relationship to history, society, and culture, as well as to genre theory.

CTCS 567 Seminar in Film/Television and a Related Art (4, max 8, Irregular) Historical, critical, aesthetic, and theoretical issues raised by a comparison of cinema and television and other allied art forms.

CTCS 569 Seminar in Film and Television Authors (4, max 8, Irregular) Seminar in the style of an auteur, studio, filmmaking, or televisual mode in terms of thematic and formal properties and their influences upon the art of film and/or television.

CTCS 585 Seminar in Film/Television Critical Theory and Production (4, Irregular) A conjoint theory/production seminar, in which the study of media texts will be combined with media production informed by the theoretical study. Specific themes and area of focus may vary.

CTCS 587 Seminar in Television Theory (4, max 8, Sp) Detailed investigation and discussion of various aspects of television, including genre, textual analysis, production and distribution systems and audience studies.

CTCS 599 Special Topics (2–4, max 8, Irregular) Detailed investigation of new or emerging aspects of cinema; special subjects offered by visiting faculty; experimental subjects.

CTCS 673 Topics in Theory (4, max 8, FaSp) Contemporary theoretical frameworks and their relationship to film and television studies. Topics differ from semester to semester.

CTCS 677 Cultural Theory (4, max 8, FaSp) Seminar in theoretical approaches to cultural studies; focus on interdisciplinary research of media and audiences, covering a range of methods and theoretical frameworks; concentration varies.

CTCS 678 Seminar in Film Theory and Medium Specificity (4, max 8, Irregular) Explores the way film has been theorized in relationship to traditional media that preceded it and electronic media that followed.

CTCS 679 Seminar in Genre and/or Narrative Theory (4, max 8, Irregular) Seminar in theoretical issues concerning genre and/or narrative as they pertain to media, literature or cultural forms. Areas of focus vary from semester to semester.

CTCS 688 Moving Image Histories: Methods and Approaches (4, FaSpSm) Research seminar in methods and approaches to moving image history including film, television, and digital media. Focus on archival research and issues in writing history.

CTCS 690 Special Problems (1–12, FaSpSm) Field production; organization and administration of local film-producing units; experimental aspects of film communication; advanced work in film history and criticism; teaching cinema. Graded CR/NC.

CTCS 790 Research (1–12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

CTCS 791 Historical and Critical Research Methods (2, max 4, FaSp) Methods and procedures for historical and critical research in the visual media. Required tutorial with Ph.D. student's dissertation committee chair, designed to assist initial work on dissertation.

CTCS 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC.

INTERACTIVE MEDIA (CTIN)

CTIN 101 Fundamentals of Procedural Media (2, Fa) Introduction to the procedural nature of interactive media. Developing proficiency in procedural literacy, reading and creating computational media. (Duplicates credit in former CTIN 400.)

CTIN 110 Statistical Analysis for Games: Storytelling with Numbers (4, Sp) An introductory course on using statistical analysis for user research and assessment of interactive projects.

CTIN 190 Introduction to Interactive Entertainment (4, FaSp) Critical vocabulary and historical perspective in analyzing and understanding experiences with interactive entertainment; students imagine and articulate their own ideas. (Duplicates credit in former CTIN 309.)

CTIN 200L The New Games Industry (2, Sm) An overview of what it means to be a professional game developer in the modern and rapidly changing economic environment.

CTIN 332 Games for Animation (2, Sp) Contemporary examples and theories of the crossover between animation and video game practices.

CTIN 401L Interface Design for Games (2, Fa) Introduction to the aesthetics, terminology and common trends of interface design for games. Topics include 2-D and 3-D spaces and user/camera perspectives.

CTIN 403L Advanced Visual Design for Games (2, Sp) The scope of visual game design, including the role of characters, architecture, indoor and outdoor spaces, and environmental effects and sounds. *Prerequisite:* CTIN 401L; *recommended preparation:* CTAN 443L.

CTIN 404L Usability Testing for Games (2, Sp) Concepts and methods of usability assessment. The emphasis will be on understanding the issues surrounding game interfaces, and utilizing usability assessment methods.

CTIN 405L Design and Technology for Mobile Experiences (2, Sp) Critical and pragmatic insights into designing mobile experiences and technology. Design groups will develop a mobile project using principles from readings and class discussions.

CTIN 406L Sound Design for Games (2, Sp) Introduction to the techniques, terminology, and implementation of sounds in games, including establishing a sense of place and concepts of realistic sound.

CTIN 444 Audio Expression (2, Sp) Foundational aesthetic principles and creative technologies for game audio. Processing, mixing, and controlling sound for games for expressive effect. *Recommended preparation:* CTIN 406L.

CTIN 456 Game Design for Business (2, Sp) Designed to provide the business professional with effective communication skills in working with the designers of games and game related venues. Not open to CTIN majors.

CTIN 458 Business and Management of Games (2, FaSp) Overview of current business models in games and interactive media, methods for pitching and getting products funded; copyright and intellectual property.

CTIN 459L Game Industry Workshop (4, Fa) Exploration of industry-related game play research questions. Student teams will develop concepts and materials to solve a research problem posed by an industry partner. *Prerequisite:* CTIN 488; *recommended preparation:* CTIN 489.

CTIN 462 Critical Theory and Analysis of Games (4, Sp) Formal, aesthetic, and cultural aspects of digital games, critical discourse around gameplay, and the relationship of digital games to other media. *Recommended preparation:* CTIN 488.

CTIN 463 Anatomy of a Game (4, Fa) Examine two game products from concept to delivery; introduce students to each of the professional disciplines involved in making digital games. *Recommended preparation:* CTIN 488.

CTIN 464 Game Studies Seminar (2, max 4, Fa) Rigorous examination of interactive entertainment: genres, history, aesthetics, cultural context, and social significance. Topics vary by semester.

CTIN 482 Designing Online Multiplayer Game Environments (2, Fa) Grouped into teams, students will study and design an original multiplayer game environment suitable for online usage. (Duplicates credit in former CNTV 482.)

CTIN 483 Introduction to Game Development (4, FaSp) Introduction to technical and creative aspects of game development, including the art of creating the digital game prototype and development of 2D games.

CTIN 484L Intermediate Game Development (2, FaSpSm) Advanced topics in game programming and implementation such as using game engines, creating digital prototypes, player controls and level design. *Prerequisite:* CTIN 483, CTIN 488 or CTIN 541; *concurrent enrollment:* CTIN 489.

CTIN 485L Advanced Game Development (2, Sp) Advanced concepts in 3-D game development: story and character progression, emergent game-play, comprehensive game mechanics, and artificial intelligence. *Prerequisite:* CTIN 483, CTIN 484L, CTIN 488, CTIN 489.

CTIN 486 Immersive Design Workshop (2, Sp) Design of game projects using immersive input devices. Development of play mechanics, feedback systems and game design for immersive environments.

CTIN 488 Game Design Workshop (4, FaSp) Theory and evaluation of interactive game experiences and principles of game design utilizing the leading software approaches and related technologies. *Recommended preparation:* CTIN 190, CTIN 483.

CTIN 489 Intermediate Game Design Workshop (2, FaSp) A follow-up to the introductory game design class, this course will introduce more advanced concepts in game design and game theories, including ideation, digital prototyping and level design. *Prerequisite:* CTIN 483, CTIN 488 or CTIN 541; *concurrent enrollment:* CTIN 484.

CTIN 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

CTIN 491L Advanced Game Project I (4, max 8, Fa) Students work in teams on pre-production and prototyping of a functional digital game suitable for distribution via the web and/or submission into independent games festivals. (Duplicates credit in former CTIN 491a.) *Recommended preparation:* CTIN 483, CTIN 484, CTIN 488, CTIN 489.

CTIN 492L Experimental Game Topics (4, max 8, FaSp) Development of a game around a custom-made physical interface; various technologies and techniques involved in a software/hardware integration; peripheral design.

CTIN 493L Advanced Game Project II (2, max 4, Sp) Students work in teams to polish and finalize a functional digital game suitable for distribution via the web and/or submission into independent games festivals. (Duplicates credit in former CTIN 491b.)

CTIN 497ab Interactive Media Startup (a: 1, Fa; b: 1, Sp) *a:* Establishing and organizing an interactive media or game company. Developing a budgeting, scheduling, and staffing plan; forming a legal company; preparing for taxes and accounting. *b:* Taking an interactive media or game company and product to market. Building a business plan, raising money, developing an audience, and keeping the production cycle running.

CTIN 499 Special Topics (2-4, max 8, FaSpSm) Detailed investigation of new or emerging aspects of cinema, television, and/or interactive media; special subjects offered by visiting faculty; experimental subjects.

CTIN 501 Interactive Cinema (2, FaSp) Provide students with a vocabulary of conceptual and artistic means to create computer based interactive works.

CTIN 502ab Experiments in Stereoscopic Imaging (2) (Enroll in CTAN 502ab)

CTIN 506 Procedural Expression (2, Fa) Developing procedural literacy in the analysis and creation of computational media; an introduction to how we create meaningful experiences using rules and interaction. (Duplicates credit in former CTIN 400.)

CTIN 511 Interactive Media Seminar (1, max 4, FaSp) Seminars on latest trends in interactive media content, technology, tools, business and culture. Graded CR/NC.

CTIN 520 Experience and Design of Public Interactives (2, Sp) Introduction to the design of public interactives, the meaning of built space and environmental experiences, and the relationship between interactivity and social communication.

CTIN 532 Interactive Experience and World Design (4, Fa) The development of interactive experiences with an emphasis on writing and development. Open to Interactive Media MFA students only. *Prerequisite:* CTWR 518.

CTIN 534L Experiments in Interactivity I (4, Fa) Experimental studio course to explore concepts of structure, aesthetics and content of interactive experience design. Lecture, 2 hours; laboratory, 2 hours.

CTIN 541 Design for Interactive Media (2, Fa) Practical exploration and practicum on the fundamental technical and aesthetic principles in the design of interactive media. Students will develop design and prototyping skills.

CTIN 542 Interactive Design and Production (4, Sp)

Interactive design, production, prototyping and testing of projects developed in CTIN 532. Open to Interactive Media MFA students only. *Prerequisite:* CTIN 532.

CTIN 544 Experiments in Interactivity II (2, Sp)

Experimental studio course in application of technology to interactive experience. Open to Interactive Media MFA students only. *Prerequisite:* CTIN 534.

CTIN 548 Preparing the Interactive Project (2, Sp)

An advanced production workshop in which students design and prepare for the production of their advanced project. Open to Interactive Media MFA students only. *Prerequisite:* CTIN 532.

CTIN 555ab Advanced Interactive Project (4-4, FaSp)

A two-semester sequence in which students produce and test an advanced interactive project. Open to Interactive Media MFA students only. *Prerequisite:* CTIN 548.

CTIN 558 Business of Interactive Media (2, Fa)

In-depth investigation of publication, distribution, business and legal aspects of the interactive entertainment business.

CTIN 584abc Individual Interactive Workshop (4-2-2-0)

Individual experimental projects involving the creative use of interactive media and film production skills.

CTIN 585 Graduate Interactive Group Project (4, max 8)

Students work in small, interdisciplinary teams on focused interactive projects which approach professional levels of creative, intellectual, interpretive, and aesthetic performance.

CTIN 590 Directed Research (1-12, FaSpSm)

Research project leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

CTIN 594abz Master's Thesis (2-2-0, FaSp)

Credit on acceptance of thesis. Graded IP/CR/NC. Open to MFA, Interactive Media majors only. *Prerequisite:* CTIN 548.

CTIN 599 Special Topics (2-4, max 8, FaSpSm)

Detailed investigation of new or emerging aspects of interactive media; special subjects offered by visiting faculty; experimental subjects.

PRODUCTION (CTPR)**CTPR 240x Practicum in Production (2 or 4, Sm)**

Basic production techniques: introduction to the cinematic elements, production techniques, and equipment; film and/or videotape production. Not available for major credit to CTPR majors.

CTPR 241 Fundamentals of Cinema Technique (2, FaSp)

Introduction to cinema production techniques and equipment including producing, directing, camera, lighting, and editing. Open to Cinema-Television majors only.

CTPR 242 Fundamentals of Cinematic Sound (2, FaSp)

Introduction to sound design, recording, editing, mixing and finishing. Lectures, demonstrations and exercises. Open to production majors only.

CTPR 280 Structure of the Moving Image (2, FaSp)

Basic theory and application of the concepts of time, space, composition, movement, light and color in motion picture production. Open to production majors only.

CTPR 285 Lateral Thinking for Filmmaking Practice (2, FaSp)

Introduces contemporary concepts of production, emphasizing the variety of contemporary media and significant related concepts. Projects created using laptops, phones and networks. Open only to Cinematic Arts Production students.

CTPR 288 Originating and Developing Ideas for Film (2, FaSp)

Exercises in observation, imaginative association, visualization, etc., that deepen the creative process, leading to ideas, stories, characters and images for narrative, documentary and experimental films.

CTPR 290 Cinematic Communication (4, 6, FaSpSm)

Introduction to the interrelationship of visuals, sound, and editing in cinematic communication. Workshops in directing and producing. Individual and group projects. Open to Cinematic Arts students only. *Recommended preparation for production majors:* CTPR 285.

CTPR 294 Directing in Television, Fiction, and Documentary (4, FaSp)

Basic concepts of directing in television, documentary and fictional narrative. Includes work with actors, documentary concepts, and creation of short television projects. Open only to Cinematic Arts Production students. *Concurrent enrollment:* CTPR 295L.

CTPR 295L Cinematic Arts Laboratory (4, FaSp)

The aesthetics and tools of the major disciplines of cinematic arts: producing, cinematography, sound, and editing. Open only to Cinematic Arts Production students. *Concurrent enrollment:* CTPR 294.

CTPR 301 Creating the Non-Fiction Film (4, Sp)

Research and writing challenges of non-fiction film (documentary, educational, industrial, political, etc.), from treatment to finished script. (Duplicates credit in former CTWR 301.)

CTPR 310 Intermediate Production (4, 6, FaSpSm)

Principles of visual and aural communication; idea development and realization using image, movement, pace, the spoken word and other sounds; small crew projects. *Prerequisite:* CTPR 294, CTPR 295L.

CTPR 319 Directing for Writers: Fundamentals (2, Sp)

A workshop in which students will direct original scene material in a stage environment on class time. Director's role and responsibilities, the process of translating the written word into image and action; basics of camera, working with actors and staging; working with and in various crew roles in a production team; editing dialogue scenes. Open to BFA Writing for Screen and Television students only. (Duplicates credit in former CTWR 319.)

CTPR 327 Motion Picture Camera (3, FaSpSm)

Use of motion picture camera equipment; principles of black-and-white and color cinematography. Individual projects.

CTPR 335 Motion Picture Editing (3, FaSp)

Theory, techniques, and practices in picture editing; use of standard editing equipment; individual projects.

CTPR 340 Motion Picture Sound Editing (2, Fa)

Techniques and aesthetic principles for recording and editing dialogue, music, and sound effects for film, television and other media.

CTPR 371 Directing for Television (4, FaSp)

Preparation of director's preproduction blockout; study of direction for live, tape, and film production, for both dramatic and informational television.

CTPR 375 Functions of a Director (4, Sp)

Theoretical considerations of the director in relationship to the multiple facets of film production.

CTPR 376 Intermediate Cinematography (4, FaSp)

Intermediate cinematography workshop; practical problems and assignments. *Prerequisite:* CTPR 241, CTPR 242, CTPR 290 and CTWR 413; *recommended preparation:* CTPR 280.

CTPR 382 Advanced Multi-Camera Television Comedy Pilot (4, FaSp)

A hands-on course which allows students to experience all aspects of multi-camera television production by creating a pilot episode of a situation comedy. *Recommended preparation:* experience working at Trojanvision.

CTPR 385 Colloquium: Motion Picture Production Techniques (4, FaSpSm)

Basic procedures and techniques applicable to production of all types of films; demonstration by production of a short film from conception to completion.

CTPR 386 Art and Industry of the Theatrical Film (4, FaSp)

Detailed analysis of one theatrical film from conception through critical reception to develop an understanding of motion pictures as art, craft, and industry.

CTPR 405 Filmic Expression (4, Irregular)

Creative aspects of film production; analysis of audio and visual forces that make the film an expressive means of communication; individual projects. Lecture-demonstration. *Prerequisite:* CTPR 310, CTPR 376.

CTPR 409 Practicum in Television Production (2, 4, max 8, FaSp)

Television production laboratory course covers operating cameras, creating graphics, technical operations, controlling audio and floor-managing live productions. Students plan and produce actual Trojan Vision programs.

CTPR 410 The Movie Business: From Story Concept to Exhibition (2, FaSp)

Examination of the industry from story ideas through script development, production and exhibition; evaluation of roles played by writers, agents, studio executives, marketing and publicity.

CTPR 419 Directing for Writers: Intermediate (2, Fa)

Advanced directing considerations and techniques applied through the directing of 2–3 scenes each outside of class on-location. Emphasis on considerations of art direction, cinematography, and staging techniques; editing concerns are explored in greater depth. Open to BFA Writing for Screen and Television students only. *Prerequisite:* CTPR 241, CTPR 290; *recommended preparation:* CTPR 318, CTPR 319.

CTPR 421 Practicum in Editing (2, FaSpSm)

Workshop in how editing can shape storytelling, using content from a variety of media and in various styles. Modern non-linear equipment and techniques. *Prerequisite:* CTPR 310 or CTPR 335.

CTPR 422 Makeup for Motion Pictures (2, FaSp)

Lecture-laboratory in makeup relating it to mood of the story and emulsion of the camera stock.

CTPR 423 Introduction to Special Effects in Cinema (2, FaSp)

Introductory workshop in the aesthetics and practices of special effects, embracing both the classical and contemporary modes.

CTPR 424 Practicum in Cinematography (2, FaSp)

Camera and lighting workshop in color cinematography, beginning with 35mm still photography and moving into 16mm and digital motion picture formats. In-class exercises. *Prerequisite:* CTPR 310 or CTPR 327.

CTPR 425 Production Planning (2, FaSp)

Theory, discussion, and practical application of production planning during preproduction and production of a film.

CTPR 426 The Production Experience (2, FaSp)

To provide students with basic working knowledge of both the skills of the motion picture set and production operations through classroom lectures and hands-on experience.

CTPR 427 Introduction to Color Correction (2, FaSpSm)

Exploration of the various aspects of color correction and how it can enhance storytelling. *Prerequisite:* CTPR 310 or CTPR 508.

CTPR 428 Summer Production Workshop (2–4, max 8, Sm)

To investigate disciplines of Cinema-TV with emphasis on one of the following areas: writing, directing, editing, camera, sound, editing, producing, interactive, computer animation or digital.

CTPR 436 Editing for Writers (2, FaSp)

Principles, techniques, practices and theories of editorial construction of film and television to help develop storytelling skills. Lectures and laboratory. Open to BFA Writing for Screen and Television students only. *Prerequisite:* CTPR 241, CTPR 290; *recommended preparation:* CTPR 319.

CTPR 438 Practicum in Producing (2, FaSp)

A comprehensive overview of the role of the producer. How projects are conceived, developed, packaged, financed and marketed. *Prerequisite:* CTPR 310 or CTPR 425.

CTPR 439 Seminar in Computer Editing (2, Sp)

Examines the differences between linear and non-linear editing systems through practical exercises, lecture, and demonstrations.

CTPR 440 Practicum in Sound (2, max 4, FaSp)

Aesthetic and technical skills of production and post-production sound necessary to create a motion picture soundtrack. *Prerequisite:* CTPR 310 or CTPR 340.

CTPR 444 Still Photography: Color, Black and White, Film, and Digital (4, Sp)

Camera and lighting techniques, with an emphasis on aesthetics and personal expression. Regular in-class studio and location shooting, culminating in long-term final project.

CTPR 450 The Production and Post-Production Assistant (2, FaSp)

Detailed view of the process of making media. Introducing fundamental thinking typical of each craft. Weekend crew experience and responsibilities. Open only to Cinematic Arts Production students. *Prerequisite:* CTPR 310; *corequisite:* CTPR 421, CTPR 424, CTPR 438, CTPR 440, or CTPR 465.

CTPR 451 Guerrilla Television (2, Fa)

A history of TV made outside the mainstream, from the “guerrilla television” movement of the ’70s to the best Independent TV of the ’90s. This course is taught from the producer’s/creator’s point of view.

CTPR 452 Independent Video Production (2, FaSp)

Documentary production course specifically designed to explore the non-traditional uses of digital video. *Prerequisite:* CTPR 451.

CTPR 453 Personal Voice: Documentary/Experimental Production (4)

A production workshop that trains students to use personal experience as the basis for their story material and video products in the tradition of diaristic literature, solo theatrical performance and personal voice media. *Recommended preparation:* THTR 479.

CTPR 454 Acting for Film and Television (4, FaSp)

Intensive examination of skills and techniques necessary for successful performances in film and television. Practical application through in-class exercises and assigned projects.

CTPR 455 Introduction to Production Design (2, FaSp)

Structure of the filmic art department, fundamentals and application of design principles to film and television, including script breakdown, design concepts and storyboarding.

CTPR 456 Introduction to Art Direction (2, FaSp)

Introduction to computer drafting, set design, rendering and model-making for students with diverse abilities. Guest lectures, group discussions and hands-on workshop.

CTPR 457 Creating Poetic Cinema (2, Fa)

An investigation of poetic cinema from four different perspectives: found poetry; applied poetry; poetry as image; and poetry in narrative fiction. Production of short films.

CTPR 458 Organizing Creativity: Entertainment Industry Decision Making (2, FaSp)

Analysis of the unique structures in the entertainment industry for organizing and managing creativity. Students research and chart pathways to leadership.

CTPR 460 Film Business Procedures and Distribution (2 or 4, max 8, FaSpSm)

Financing, budgeting, management as applied to films; problems of distribution, including merchandising, cataloging, evaluation, and film library management.

CTPR 461 Managing Television Stations and Internet Media (2, FaSpSm)

Managing electronic media, including radio and television stations, broadcast and cable networks, and the Internet.

CTPR 465 Practicum in Production Design (2, FaSp)

Introduction to visual storytelling: designing the look of a film, building visual continuity into a film, study of the production designer’s art and craft. *Prerequisite:* CTPR 310, CTPR 455, or CTPR 456.

CTPR 466 The Art of the Pitch (2, FaSpSm)

Presenting ideas for feature and television projects to buyers: shaping ideas for pitching, assessing and targeting the marketplace, in-class pitching of projects. *Prerequisite:* CTPR 310.

CTPR 468 The Film Makers (4, FaSp)

To define the roles and goals of production designers, cinematographers, editors, and directors by meeting and discussing with them their responsibilities in the filmmaking process. *Prerequisite:* CTPR 290.

CTPR 470 Practicum in On-screen Direction of Actors (4, FaSp)

Concentration on the basic skills in working with actors from a director’s point of view.

CTPR 472 Non-Theatrical Aspects of Film and TV Producing (2, max 4, FaSpSm)

Basic film and TV business procedures: financing, production design, planning, management, and marketing of non-theatrical film and television products.

CTPR 473 Directing the Composer (2, Sp)

Acquaints aspiring filmmakers (who have no musical background) with the fundamental concepts of film music from theoretical, creative, and pragmatic standpoints. Open to Cinema-Television majors only.

CTPR 474 Documentary Production (4, FaSpSm)

Pairs produce, direct, shoot, and edit a short documentary on a subject of their choice. Finished projects will be suitable for broadcast/festivals.

CTPR 475 Directing: Mise-en-Scene (4, FaSpSm)

Through a semester-long collaboration, directors and actors learn how to work and communicate with each other while shooting two scenes on camera per director. *Prerequisite:* CTPR 310, CTPR 376.

CTPR 476 Directing The Comedic Scene (2, FaSpSm)

Directing comedy: casting, rehearsing, directing actors, scene analysis, staging, shooting, and editing, leading to the filming of a two-person comic scene.

CTPR 477 Special Problems in Directing (2 or 4, max 8, FaSp) Detailed investigation and analysis of problems in directing. Individual projects. *Prerequisite:* CTPR 310 and CTPR 376.

CTPR 478 Practicum in Directing (2, FaSp) Concepts of directing for motion pictures, emphasizing the working relationship of actors and directors. Scenes will be staged in class and filmed for class presentation. Open only to Cinematic Arts Production students. *Prerequisite:* CTPR 310.

CTPR 479 Single Camera Television Dramatic Pilot (2, Fa) Collaborative writing, preproduction and shooting of a pilot act for an original episodic television drama, shot on stage sets built for the show.

CTPR 480 Advanced Production Workshop (4, max 12, FaSpSm) Directors, producers, cinematographers, editors and sound designers collaborate to produce, shoot, edit and deliver fictional, documentary or experimental projects. *Prerequisite:* CTPR 376 or CTPR 450; *recommended preparation:* CTPR 478 required to direct.

CTPR 481abL Cinema Workshop (2–2, FaSpSm) Practical experience in motion picture production. (Duplicates credit in CMPP 541abL.)

CTPR 484 Advanced Multi-Camera Television Workshop (4, max 8, FaSp) Exercises and practical application for writing and producing a multi-camera television project. Special attention to the development of the sitcom. *Recommended preparation:* CTPR 371 required for students who wish to direct a sitcom.

CTPR 485 Production Workshop II (4, Irregular) Intermediate experience in group filmmaking affording expanded areas of responsibilities. Take directorial responsibility or two areas different from those taken in CTPR 480. Lecture and laboratory workshop in conjunction with CTPR 480. *Prerequisite:* CTPR 480.

CTPR 486 Single Camera Television Dramatic Series (4, FaSpSm) Collaborative production and post-production of an original episodic drama, shot on original sets on stage and on location. *Prerequisite:* CTPR 376, CTPR 450, CTPR 504, or CTPR 507; *recommended preparation:* CTPR 479.

CTPR 487 The Recording Studio in Film and Video Production (2) Exploration of the role of the recording studio in professional film and video productions. Emphasis on technical and hardware considerations.

CTPR 489 Television Docudrama Production (4) Research, planning, and production of the docudrama.

CTPR 493 Senior Television Seminar (2 or 4, max 4, FaSp) Detailed investigation and discussion of various aspects of television.

CTPR 496 The Film Industry: Career Challenges and Choices for Women (2, FaSp) This class discusses women's roles in the entertainment industry and career opportunities available for women in the business, corporate and creative sectors.

CTPR 497 Music Video Production (2, FaSp) Writing the concept, budgeting, shooting, editing and directing a music video. Also covered: getting the job, dealing with the band, working with the record company. *Prerequisite:* CTPR 241, CTPR 290, CTPR 310.

CTPR 499 Special Topics (2–4, max 8, FaSpSm) Detailed investigation of new or emerging aspects of cinema and/or television; special subjects offered by visiting faculty; experimental subjects.

CTPR 504 Fundamentals of Production (4, FaSpSm) Each student writes/directs a group exercise; includes: collaboration, script breakdown, story beats, casting, directing, camera operation, expressive cinematography, scene structure, AVID, editing and sound design. Graded CR/NC.

CTPR 506 Visual Expression (2, FaSp) Definition, analysis, and structure of the visual components that make film an expressive medium; theory and practical application; individual projects and lecture/demonstration. *Prerequisite:* CTAN 547 or CTIN 534 or CTPR 504 or CTPR 507.

CTPR 507 Production I (4, FaSpSm) The effective communication of ideas through the language of cinema; one directing exercise; two short HD projects; introductions to producing, directing, editing, cinematography, and sound. Open only to Cinematic Arts graduate students.

CTPR 508 Production II (6, FaSpSm) Practicum in group production, emphasizing the collaborative process and the expressive use of sound and image. Open to graduate students only. *Prerequisite:* CTPR 507, CTPR 510, CTWR 505; *concurrent enrollment:* CTPR 509.

CTPR 509 Concepts of Cinematic Post Production — Editing and Sound (2, FaSp) Exploration of the practical, conceptual and aesthetic aspects of editing and sound for film and digital media. *Concurrent enrollment:* CTPR 508.

CTPR 510 Concepts of Cinematic Production (1, FaSpSm) Overview of the process of making media. Introduces fundamental thinking typical of each craft. Presents realities of careers and ethical issues in media. *Corequisite:* CTPR 507.

CTPR 515 Global Exchange Workshop (2, Sm) An intense workshop in documentary filmmaking. Student teams from USC and a Chinese university make short documentaries on Los Angeles and Beijing as global cities.

CTPR 522 Reality Television Survey (2, FaSpSm) A comprehensive overview of the world of reality television; each student will develop and pitch an original reality-based program.

CTPR 523 Introduction to Multiple-Camera Production (2, FaSp) How to direct comedy or dramatic scenes, using multiple camera techniques. Students also serve as crew members, learning lighting, mixing, studio controls, and stage management. *Prerequisite:* CTPR 508.

CTPR 527 Special Effects in Cinema (2 or 4, max 4, Irregular) Lecture, discussion, and exercises in optical and/or mechanical special effects. *Prerequisite:* CTPR 241 and CTPR 290.

CTPR 530 Producing for Independent Films (2, FaSp) Producing film, television and multi-media productions. Focuses on business procedures, production design, planning, budgeting, management, marketing, financing, and the structures and practices of the industry.

CTPR 531 Planning the Production (2, max 6, FaSp) A preproduction workshop in which students complete the research and planning of an intermediate project to be executed in CTPR 547. *Prerequisite:* CTPR 508.

CTPR 532 Intermediate Directing (2, FaSp) Practical experience in staging dramatic narrative scenes, emphasizing directing actors, rehearsal techniques and camera blocking. *Prerequisite:* CTPR 508.

CTPR 533 Directing Techniques (2, FaSp) Practicum in more complex directing issues concentrating both on performance and exploration of shaping scenes visually through blocking of action and placement of camera. *Prerequisite:* CTPR 532.

CTPR 534 Intermediate Production Design (2, Irregular) Exercises in production design concentrating on practical and aesthetic approaches to designing for film, television and commercials. *Prerequisite:* CTPR 508.

CTPR 535 Intermediate Editing (2, FaSp) Editorial construction of film sequences to analyze the interrelationships of the various film elements, both visual and aural. *Prerequisite:* CTPR 508 or CTAN 547.

CTPR 536 Editing for Scriptwriters (2, FaSp) Principles, techniques, practices and theories of editorial construction of film and TV scenes and sequences. Lecture, 2 hours; laboratory, 1 hour. (Duplicates credit in former CTWR 536.) Open to MFA Writing for Screen and Television students only.

CTPR 537 Intermediate Cinematography (2, FaSp) Close study through practical exercises of the technical and aesthetic principles of cinematography. *Prerequisite:* CTPR 508 or CTAN 547.

CTPR 538 Intermediate Producing (2, FaSp) Definition, examination and practical experience in the role of the line producer as it relates to preproduction, production and post production. *Prerequisite:* CTPR 508.

CTPR 539 Intermediate Graphics (2, Irregular) An investigation into the nature and meaning of graphic concepts relative to their use in film and video. *Prerequisite:* CTPR 508.

CTPR 540 Intermediate Sound (2, FaSp) Practical and aesthetic considerations relating to recording, editing and sound design. *Prerequisite:* CTPR 507 or CTAN 547.

CTPR 542 Intermediate Electronic Imaging (2, Irregular) Technical and creative aspects of electronic imaging such as high definition television, multi-media, and digital television. Emphasis on understanding potential and limitations of state-of-the-art technologies. *Prerequisite:* CTPR 508.

CTPR 543 Editing the Advanced Project (2, Irregular) Utilitarian seminar focused on editing advanced projects. Open to Cinema-Television production students only. *Corequisite:* CTPR 481a, CTPR 581a, CTPR 586a or CTPR 587a.

CTPR 545 Intermediate Multi-Camera Television Workshop (4, FaSp) Practicum in the creative usage of multi-camera and single camera electronic production techniques. Students will complete an 8–12 minute video piece using three camera production procedures. Open to production majors only. *Prerequisite:* CTPR 508.

CTPR 546L Production III, Fiction (6, max 12, FaSp) An intensive workshop experience in which students, crewing in their area of specialization, complete the shooting and postproduction of projects up to thirty minutes in length. *Qualifying courses:* for directors, CTPR 532, and for cinematographers, CTPR 537; *prerequisite:* CTPR 508.

CTPR 547L Production III, Documentary (6, max 12, FaSp) Intensive workshop; students shoot and finish documentary projects up to about 25 minutes. *Qualifying courses:* for directors, CTPR 531 and crewing on either CTPR 546L or CTPR 547L; *prerequisite:* CTPR 508.

CTPR 551 Directing in a Virtual World (2, FaSp) Telling cinematic stories using visual effects and virtual backgrounds, environments, and characters. Hands-on exercises emphasizing directing. Open only to Cinematic Arts students. *Recommended preparation:* CTAN 462 or CTAN 555 or CTPR 532 or CTPR 537.

CTPR 552 Advanced Directing (2, FaSp) An advanced production class in directing. Encounters with experienced directors; and individual student production of a short. *Prerequisite:* CTPR 533 or CTPR 546L.

CTPR 553 Developing the Advanced Project (1, FaSp) Script workshop for advanced projects. Covers key screenplay elements, including protagonist and objective, conflict, obstacles, premise and opening, main tension, emotional throughline, etc. *Prerequisite:* CTPR 508.

CTPR 554 Advanced Sound (2, FaSp) Study of the technical and aesthetic elements of sound design at the professional level. Intended for those contemplating a career in the field of audio. *Prerequisite:* CTPR 540 or one of the following in equivalent crew position: CTPR 523, CTPR 546L, CTPR 547L.

CTPR 555 Advanced Production Design (2, Irregular) Execution of a complete production design including script breakdown, storyboards, production sketches, plans, elevations and a color model. *Prerequisite:* CTPR 534.

CTPR 556 Advanced Editing (2, FaSp) Advanced editorial theory and practice intended for those specializing in film and electronic editing. *Prerequisite:* CTPR 535 or one of the following in equivalent crew position: CTPR 523, CTPR 546L, CTPR 547L.

CTPR 557 Advanced Cinematography (2, FaSp) Advanced camera and lighting techniques for those considering a professional career in cinematography. *Prerequisite:* CTPR 537 or one of the following in equivalent crew position: CTPR 523, CTPR 546L, CTPR 547L.

CTPR 558 Advanced Producing (2, Irregular) Defines and examines the role of the Executive/Feature Producer through the preproduction, production and post production phases. *Prerequisite:* CTPR 538 or CTPR 546L or CTPR 545.

CTPR 559 Advanced Graphics (2, Irregular) Advanced study in graphic film/video production including writing, graphic arts, camera, editing and sound. *Prerequisite:* CTPR 539.

CTPR 560 Seminar in Motion Picture Distribution, Budgeting, and Management (2 or 4, max 8, FaSp) Problems of location production, foreign release, and packaging.

CTPR 561 Publicity for Cinema and Television (4, Sp) Analysis and preparation of advertising and publicity campaigns for entertainment films and television.

CTPR 562 Seminar in Motion Picture Business (2 or 4, max 8, FaSp) Problems of studio operation, production, distribution, exhibition, or legal procedures relating to the motion picture.

CTPR 563 The Business of Representation (4, FaSp) Various roles an agent, manager, attorney or publicist play in representing talent, producers and writers. Taught by professionals who are at the forefront of the entertainment industry.

CTPR 565 Making Media for Social Change (2, FaSp) Each student will produce and direct a film incorporating a social issue of his/her choice into the narrative of the film. *Prerequisite:* CTPR 480 or CTPR 486 or CTPR 546 or CTPR 547.

CTPR 566 Developing and Selling Your Film and TV Projects (2, FaSp) Developing, pitching, and selling your feature motion picture and TV projects. Open to undergraduate seniors and third-year graduate cinema majors only.

CTPR 568 Advanced Electronic Imaging (2, Irregular) Electronic imaging in high definition television, interactive multi-media, and computer animation. Emphasis on creative use of the technologies for new forms of expression and communication. *Prerequisite:* CTPR 542.

CTPR 570 Studies in the Functions of a Director (2, Fa) Analysis of the director's relationship to the multiple facets of film production.

CTPR 572 The World of Television: From Concept to Air and Everything in Between (2, FaSp) Takes projects from conception to sale, including development, production, post-production, and marketing. Students will develop original projects. *Prerequisite:* CTPR 508.

CTPR 573 Producing the Advanced Project (1, FaSp) Basic skills of production planning as applied to students' advanced project scripts. Covers all steps from breakdown to delivery. *Prerequisite:* CTPR 508; *recommended preparation:* submission of script required.

CTPR 575ab Directing for Writers (a: 2, Fa; b: 4, Sp)
a: Fundamentals of directing for film through emphasis on enhancing the writer's understanding of the director's process. Students shoot each other's scenes on a soundstage, edit and re-edit scenes for in-class presentation. *b:* Concerns, domains and responsibilities of the film director. Students will complete a five- to twelve-minute film which they will write and direct incorporating class presentations of work in progress. Open to MFA screenwriting majors only.

CTPR 581abc Individual Production Workshop (4-2-2-0, FaSpSm) Individual experimental projects involving the creative use of visuals (live action or animated) and sound. Open to Production students only. *Qualifying courses:* CTPR 532 and CTPR 573 (for directors); CTPR 573 (for producers); CTPR 537 (for cinematographers), CTPR 535 (for editors) CTPR 546L or CTPR 547L as production sound person (for sound). Graded IP/Letter. *Prerequisite:* CTPR 546L or CTPR 547L.

CTPR 582abz Advanced Production Seminar (2-2-0, FaSpSm) Advanced individual film or video projects under the guidance of a faculty mentor, without benefit of university equipment or resources. Open to production majors only. *Qualifying courses:* CTPR 532 and CTPR 573 (for directors); CTPR 573 (for producers); CTPR 537 (for cinematographers); CTPR 535 (for editors); and CTPR 546L or CTPR 547L as production sound person (for sound). Graded IP/Letter. *Prerequisite:* CTPR 546L or CTPR 547L.

CTPR 583 Graduate Television Production (6, FaSp) Advanced television group production workshop for students who want to produce an advanced multi-camera project. Open to production majors only. *Prerequisite:* directing and producing positions: CTPR 532, CTPR 553, CTPR 573; for all positions: CTPR 523 or CTPR 546L or CTPR 547L in equivalent crew position.

CTPR 585abz Advanced Producing Project (2-2-0, FaSpSm) Supervised, individual study leading to the creation of a producer's package. The package will include script, schedule, budget, finance and marketing plan. Open only to production majors. Graded IP/L. *Prerequisite:* CTPR 486 or CTPR 546 or CTPR 547 (as producer).

CTPR 586abz Production IV (6-0-0, FaSpSm) Advanced group production workshop for students who have successfully completed Production III. Graded IP/L. *Prerequisite:* CTPR 546L or CTPR 547L; *qualifying courses:* (for producers) CTPR 573, (for directors) CTPR 532 and CTPR 573, (for cinematographers) CTPR 537, (for editors) CTPR 535, (for sound) CTPR 546L or CTPR 547L as production sound person.

CTPR 587abz Group Production Workshop (4-2-2-0, FaSpSm) Advanced group project involving the creative use of visuals (live action or animated) and sound specifically designed for students who want to work in pairs. Open to production majors only. Graded IP/Letter. *Qualifying courses:* CTPR 532 and CTPR 573 (for directors); CTPR 573 (for producers); CTPR 537 (for cinematographers); CTPR 535 (for editors); CTPR 546L or CTPR 547L as production sound person (for sound). *Prerequisite:* CTPR 546L or CTPR 547L.

CTPR 594abz Master's Thesis (2-2-0) Credit on acceptance of thesis. Graded IP/CR/NC.

CTPR 599 Special Topics (2-4, max 8, Irregular) Detailed investigation of new or emerging aspects of cinema; special subjects offered by visiting faculty; experimental subjects.

WRITING (CTWR)

CTWR 105 Nonverbal Thinking: Visual and Aural (2, Sp) An introduction to non-verbal elements of images and sounds which convey meaning, mood, and emotion.

CTWR 106ab Screenwriting Fundamentals (4-4, FaSp) *a:* Introduction to and overview of the elements of theme, plot, character, and dialogue in dramatic writing for film. *b:* Exercises in dramatic writing: theme, plot, character, dialogue and images. Integration of these elements into scenes and sequences. Open to BFA Writing for Screen and Television students only.

CTWR 120 Genesis of the Screenplay (2, Sp) The evolution of the screenplay from its roots in myths, plays, and short stories. Writing original treatments for film and television inspired by literary masters. Open only to Writing for Screen and Television majors.

CTWR 206ab Writing the Screenplay (a: 4, Fa; b: 4, Sp) *a:* Development of synopsis and treatment for a theatrical or documentary screenplay: theme, plot, character, *mise-en-scene* and utilization of cinematic elements. *b:* Writing a feature-length screenplay based on treatment developed in CTWR 206a. Includes a first draft and a polish. Open only to BFA, Writing for Screen and Television students.

CTWR 213 Content and Consciousness (2, Fa) Inquiry into the relationship between cognitive and affective knowledge as it relates to the art of screenwriting and the screenwriter.

CTWR 215 Practicum in Writing Short Films (2, Sp) Developing stories less than feature length; writing screenplays from them; understanding what length each story demands; creating idiosyncratic forms and styles. Open to BFA Writing for Screen and Television students only.

CTWR 250 Breaking the Story (2, SpSm) Examination of the fundamental elements of a good story, and how to use those elements to develop new screenplay ideas. *Recommended preparation:* CTWR 106b.

CTWR 305 Advanced Screenwriting: The Relationship Screenplay (4, Fa) An inquiry into the complex nature of human relationships by writing an original feature length screenplay that examines the multi-dimensional world of characters and the ties that bind them together. Open to BFA Writing for Screen and Television students only.

CTWR 306 Advanced Screenwriting: Alternative Narrative (4, Sp) Develop and write an original feature-length screenplay utilizing a non-linear narrative story structure that examines the creative use of time, perspective, and point of view to enhance both character and story. Open to BFA Writing for Screen and Television students only. *Prerequisite:* CTWR 305.

CTWR 314 Writing To Be Performed (2, Fa) Understanding the elements of screen performance to enhance the writing of complex characters and human relationships. Open only to Writing for Screen and Television majors. *Prerequisite:* CTWR 106b.

CTWR 315x Filmwriting (3, FaSpSm) The basics of screenwriting: theme, story structure, characterization, format, dialogue, and scene description. A character profile, short treatment, and first 30 pages of the screenplay are written. Lectures, screenings, and in-class readings. Not for degree credit for Cinema-Television majors.

CTWR 321 Introduction to Television Writing (2, FaSpSm) The fundamentals of writing for episodic television. Writing scenes from popular television shows and examination of television story structure. *Prerequisite:* CTWR 106b or CTWR 412 or CTWR 413.

CTWR 401 Writing the First Draft Feature Screenplay (4, max 8, Sm) Writing an outline and the first draft of a feature-length screenplay. Emphasis on character interrelationships, conflict, and three-act structure.

CTWR 404 Foundations of Comedy (2) Study of comedy theory and practical applications in film, television, and social media. Lectures and screenings of comedic forms tracing past, present and future.

CTWR 410L Character Development and Storytelling for Games (4, Fa) An exploration of characters and story worlds as they relate to gaming with an emphasis on emotionally rich environments in interactive entertainment. *Recommended preparation:* CTIN 488.

CTWR 411 Television Script Analysis (2, Sp) In-depth analysis of the craft of writing prime-time episodic television. Examination of situation comedies and dramas through weekly screenings and lectures.

CTWR 412 Introduction to Screenwriting (2) Introduction to the formal elements of writing the short film.

CTWR 413 Writing the Short Script I (2, FaSp) Preparation of scripts for short films: form, structure, planning.

CTWR 414 The Screenplay (2) Students study story structure and develop several story outlines, write a short script for possible production, a feature film outline and first act. Open only to Cinematic Arts Film and Television Production majors. *Prerequisite:* CTWR 413; *recommended preparation:* CTWR 416.

CTWR 415ab Advanced Writing (2) *a:* Principles of the feature film; creating theme, character and structure that combine into a feature-length story treatment. *Prerequisite:* CTWR 412 or CTWR 413; *recommended preparation:* CTWR 416. *b:* Creation of script with extensive work-shopping of scenes in class leading to a first draft and revision as a final assignment.

CTWR 416 Motion Picture Script Analysis (2) Critical analysis of story structure from classic films to contemporary works. Identification of key story concepts and elements of three-act structure.

CTWR 417 Script Coverage and Story Analysis (2, FaSp) Evaluation of completed scripts prior to their production. Coverage and analysis of scripts as potential properties from the perspective of a production company.

CTWR 418ab Senior Thesis (a: 4, Fa; b: 4, Sp) *a:* Creation of feature-length treatment and first draft senior thesis screenplay, including "pitching" experiences. *b:* Completion and revision of senior thesis project and introduction to motion picture industry procedures and practices through interaction with industry representatives. Open to BFA Writing for Screen and Television students only. *Prerequisite:* CTWR 305.

CTWR 419ab Senior Thesis in Dramatic Television (a: 4, Fa; b: 4, Sp) *a:* Advanced workshop developing an original hour-long dramatic series including characters, world, and story lines for season one. Final assignment is completed hour-long pilot episode. *Prerequisite:* CTWR 305 and CTWR 421; *recommended preparation:* CTWR 411. *b:* Revision of original pilot script, writing of mid-season episode, and completion of bible for original dramatic series developed in first semester. Open to BFA Writing for Screen and Television students only.

CTWR 421 Writing the Hour-Long Dramatic Series (2, max 4, FaSpSm) Writing an episode of an existing dramatic television series within the hour-long format with an emphasis on conception, pitching, characterization and structure. *Prerequisite:* CTWR 321 or CTWR 514a or CTWR 529; *recommended preparation:* CTWR 411.

CTWR 422 Creating the Dramatic Television Series (2, max 4, FaSm) Examination and creation of the world, characters, and concept for an original hour-long dramatic series. Writing an outline for an original dramatic pilot.

CTWR 430 The Writer in American Cinema and Television (2, FaSp) American and international writers in cinema; screenwriting; political and economic aspects of the writer in the motion picture industry. Lectures, guest speakers, screenings.

CTWR 431 Screenwriters and Their Work (2, max 6, FaSpSm) Detailed investigation of a specific screenwriter's style and the works they've influenced. Lectures include screenings and visiting screenwriters.

CTWR 433 Adaptations: Transferring Existing Work to the Screen (2, Fa) An examination of motion picture adaptations; problems attendant upon translating a novel, play, or other creative forms into screenplays. *Prerequisite:* CTWR 206b or CTWR 414 or CTWR 514a or CTWR 529.

CTWR 434 Writing the Half-Hour Comedy Series (2, max 6, FaSp) Writing an episode of an existing half-hour comedy series, with emphasis on the anatomy of a joke, comedic structure, and character. *Prerequisite:* CTWR 321 or CTWR 514a or CTWR 529; *recommended preparation:* CTWR 411.

CTWR 435 Writing for Film and Television Genres (2 or 4, max 8, FaSp) Preparation of proposals and scripts for different types of film or television programming; emphasis on conception, structure, characterization and format. *Prerequisite:* CTWR 206b or CTWR 415b or CTWR 514a or CTWR 533a; *recommended preparation:* CTWR 416 or CTWR 516.

CTWR 437 Writing the Original Situation Comedy Pilot (4, max 8) Advanced workshop for writing an original half-hour comedy series, including a pilot script, summary of characters, and story lines for first season. *Prerequisite:* CTWR 434; *recommended preparation:* CTWR 411.

CTWR 438 Linked Narrative Storytelling for the Web (4, Fa) Create, develop, and execute episodic video content for the web. Focus on content and characters that are viable in the internet landscape. *Prerequisite:* CTWR 206b or CTWR 414 or CTWR 514b or CTWR 529.

CTWR 439 Writing the Original Dramatic Series Pilot (4, max 8, FaSp) An advanced workshop in which students create an original dramatic series, including a first script and a summary of characters and storylines. *Prerequisite:* CTWR 421.

CTWR 441 Writing Workshop in Creativity and Imagination (2, FaSp) Students will explore a variety of problem solving techniques to strengthen their creative work and apply these techniques to individual writing projects.

CTWR 449 Rewriting the Original Dramatic Series Pilot (4, max 8) An advanced workshop in which an original hour-long television pilot will be rewritten with emphasis on character, world creation and future story lines. *Prerequisite:* CTWR 439; *recommended preparation:* CTWR 411.

CTWR 453 Advanced Feature Rewriting (4, FaSpSm) An advanced workshop in which a feature length screenplay will be rewritten using a specific methodology that focuses on a macro to micro approach to revision. *Prerequisite:* CTWR 305 or CTWR 415b.

CTWR 459ab Entertainment Industry Seminar (2, Fa; 2, Sp) Examination and analysis of various topics, issues and resources pertaining to creative, legal and business perspectives for writers in the entertainment industry. *Prerequisite:* CTWR 459a for CTWR 459b.

CTWR 468 Screenwriting in Collaboration (4, max 8, Sp) Writing an original screenplay or pilot collaboratively with a partner, with special attention paid to the writing team dynamic and the 'third' writer's voice. *Prerequisite:* CTWR 305 or CTWR 415b or CTWR 514b or CTWR 533a; *recommended preparation:* CTWR 416 or CTWR 516.

CTWR 487 Staff Writing the Multi-Camera Television Series (4, max 8, Fa) Working on the writing staff of an original multi-camera television series, with emphasis on the writers' room experience and how to executive produce an episode. *Prerequisite:* CTWR 434.

CTWR 499 Special Topics (2-4, max 8, FaSpSm) Detailed investigation of new or emerging aspects of cinema and/or television; special subjects offered by visiting faculty; experimental subjects.

CTWR 502 Graduate Writing Symposium (1, Sp) A survey of the creative and professional range of the working screenwriter. *Recommended preparation:* CNTV 501.

CTWR 505 Creating the Short Film (2, FaSp) Strengthening and deepening the ability to conceive and develop ideas that will lead to compelling, authentic, and personally meaningful films. (Duplicates credit in CTWR 528.) *Concurrent enrollment:* CTPR 507, CTPR 510.

CTWR 509 Understanding the Process of Film Making (2, Sp) An introduction for screenwriters to the process of creating a feature film, from script through release print, including pre-production, production and post-production.

CTWR 513 Writing the Short Script (2, Fa) Preparation of scripts for short films; dramatic, informational, experimental, and other forms. Open to screenwriting (CNTV) and dramatic writing (Theatre) majors only. *Concurrent enrollment:* CTWR 514a.

CTWR 514ab Basic Dramatic Screenwriting (a: 2, Fa; b: 2, Sp) Dramaturgy for the fiction and nonfiction work. Techniques for creating the original or adapted theatrical script. Open to graduate screenwriting majors (CTWR) and dramatic writing (Theatre) majors only. *a:* Emphasizes narrative development, through short scripts, sequences, and story outlines. *Concurrent enrollment:* CTWR 513. *b:* Development of an outline and feature length, original script.

CTWR 515abcd Practicum in Screenwriting (4-4-1-1, FaSp) *a:* Creation of a feature screenplay from presentation through treatment, including some scene work. *b:* Comprehensive rewriting of a second and third draft of a feature screenplay leading to a polished and professional piece. *c* and *d:* Supervised rewrite of feature screenplay. *Prerequisite:* CTWR 514a; CTWR 515a for CTWR 515b; CTWR 515b for CTWR 515c; CTWR 515c for CTWR 515d.

CTWR 516 Advanced Motion Picture Script Analysis (2, FaSp) Critical analysis of the structure of films from the classics to current award winners. Students will learn how to identify key story concepts and break down three act structure in finished films and scripts.

CTWR 517ab Thesis in Half-Hour Television Comedy (a: 4, Fa; b: 4, Sp) *a:* Developing an original half-hour comedy television series, including characters, world and storylines for season one. Completion of a first draft script, polish, and series bible. *Prerequisite:* CTWR 514b, CTWR 534. *b:* The rewrite, casting, and performance stages of television comedy development. The completion of a final draft of the pilot script and series bible. Open only to Writing for Screen and Television master's students.

CTWR 518 Introduction to Interactive Writing (2, Sp) A series of exercises written and discussed for interactive experiences.

CTWR 519ab Thesis in Television Drama (a: 4, Fa; b: 4, Sp) *a:* Writing the pilot: an intensive workshop in which master's students develop an original television one-hour series including characters, world and storylines for season one. Final assignment is the finished pilot episode of the series. *Prerequisite:* CTWR 514b and CTWR 521; *recommended preparation:* CTWR 411. *b:* Further development of the original series by writing the bible for the series and the mid-season episode which is reflective of storylines, characters and settings developed in CTWR 519a. Open only to MFA Writing for Screen and Television students.

CTWR 520 Advanced Scene Writing Workshop (2, SpSm) Intensive workshop oriented specifically to writing and rewriting the most effective and telling dramatic scenes to heighten audience participation and greater story impact. *Prerequisite:* CTWR 514b or CTWR 533a.

CTWR 521 Advanced Hour-Long Television Drama (2, max 4, FaSp) Writing the first draft and revision of an episode of an existing dramatic television series. *Prerequisite:* CTWR 514a or CTWR 533a.

CTWR 528 Screenwriting Fundamentals (2, FaSp) Introduction to the principles of screenwriting with special emphasis on story, characterization and dramatization.

CTWR 529 Intermediate Screenwriting (2, FaSp) Emphasizes structural elements crucial to the feature film. Techniques for creating an original and adapted theatrical-length script. *Prerequisite:* CTPR 507 and CTWR 505.

CTWR 533ab Writing the Feature Script (4-4, FaSp) Advanced screenwriting workshop. *a:* Development of characters and story to complete a treatment and first draft of a feature length script. *Prerequisite:* CTWR 529; *recommended preparation:* CTWR 516. *b:* Rewriting the first draft into a second draft through advanced workshopping of script. A third draft polish is the final assignment. *Prerequisite:* CTWR 533a.

CTWR 534 Advanced Half-Hour Television Comedy (2, max 4) Advanced workshop in writing the first draft and revision of an episode of an existing comedic television series. The comedy writing room will be emphasized. *Prerequisite:* CTWR 514a or CTWR 533a; *recommended preparation:* CTWR 404.

CTWR 541 Dreams, the Brain, and Storytelling (2, FaSpSm) Examination of the links between the brain, creativity, neuroscience and storytelling. Through lectures, screenings, and readings, students will log dreams for use in creative exercises.

CTWR 550 Advanced Story Development (2, FaSp) Advanced development of the story creation process by examining the core elements of a good story. Compiling a portfolio of story ideas. *Prerequisite:* CTWR 514a or CTWR 529.

CTWR 553 Advanced Rewriting Workshop (4, FaSp) Advanced feature screenwriting, emphasizing the rewrite of a first draft script. *Prerequisite:* CTWR 514b or CTWR 533b.

CTWR 555 Pitching for Film and Television (2, FaSp) Development and pitching of ideas for motion pictures, episodic and television pilots. Reducing ideas to basic components enhancing verbal presentation skills. *Prerequisite:* CTWR 305 or CTWR 415b or CTWR 514b or CTWR 533b.

CTWR 559 The Business of Writing for Screen and Television (2, FaSp) Examination and in-depth analysis of the studio system, the television development process, literary representation, new emerging markets, and the Writers Guild of America. *Prerequisite:* CTWR 514b.

CTWR 572 Practicum in Directing Actors for Film (2 or 4, FaSp) Seminar in directing actors for film; emphasis on demonstration and laboratory exercises, script analysis, and detailed study in character motivations.

CTWR 574 Advanced Seminar in Directing Actors for Film (2, FaSp) Emphasis on detailed script analysis and character motivation. Individual projects. *Prerequisite:* CTWR 572, CTCS 673 or CTPR 532.

CTWR 599 Special Topics (2-4, max 8, Irregular) Detailed investigation of new or emerging aspects of cinema; special subjects offered by visiting faculty; experimental subjects.

MOTION PICTURE PRODUCING (CMPP)

CMPP 541ab Producing Workshop (a: 4, Fa; b: 4, Sp) *a:* Hands-on workshops in creative and physical filmmaking. *b:* Further hands-on creative and physical filmmaking, making more advanced short films. Open to PFTM students only. (Duplicates credit in CTPR 504 and former CMPP 541L.)

CMPP 550 Script Analysis for the Producer (2, FaSp) Detailed evaluation of completed scripts and of the producer's role in bringing them to fruition. Open to PFTM students only.

CMPP 560 Script Development (2, FaSp) From idea and story to finished shooting script. Open to PFTM students only.

CMPP 561 Motion Picture and Television Marketing (2, Fa) Analysis and preparation of film and television show marketing campaigns from creative concept to targeting across various media. Open to PFTM students only.

CMPP 563 Producing Symposium (2) Lectures on creative and business aspects of producing. Open to PFTM students only.

CMPP 564 Digital Media and Entertainment (2, Sp) Exploring the effect of digital media on the entertainment landscape. Open to PFTM students only.

CMPP 565 Scheduling and Budgeting (4, FaSp) Concept and preparation of a complete schedule and budget. Open to PFTM students only.

CMPP 566 Finance (2, FaSp) Seminar on financial aspects of film industry and methods of financing films. Open to PFTM students only.

CMPP 568 Producing for Television (2, Fa) Discussions of the creative and financial aspects of television producing. Open to PFTM students only.

CMPP 569 Seminar on Non-Mainstream Producing (2, FaSp) Discussions on non-major studio producing options, including non-traditional financing and non-theatrical producing. Open to PFTM students only.

CMPP 570 Advanced Television (2, Fa) Advanced studies of the business of television, including the economic structure of the television industry. Open to PFTM students only.

CMPP 571 Producing the Screenplay (2, FaSp) Workshop for the creation and development of a screenplay or teleplay. Open to PFTM students only.

CMPP 589ab Graduate Film Business Seminar (a: 3, Fa; b: 4, Sp) Economics of the entertainment industry, including entertainment law, and rights acquisition. Includes weekly film screening. Open to PFTM students only.

CMPP 591 Producing Practicum (2, Irregular) Producing workshop encompassing all aspects of producing, including script development, budgeting, casting and actual production.

CMPP 592 Individual Project Seminar (4, Sp) Directed research project and seminars in related topics. Open to PFTM students only. (Duplicates credit in former CTPR 592.)

CMPP 599 Special Topics (2, max 4, Irregular) Investigation of new and emerging aspects of producing motion pictures and television; special and experimental subjects. Open to PFTM students only.

MULTIMEDIA SCHOLARSHIP (IML)

IML 102 Digital Studies Studio I (4, Fa) Introduces the history, theory and practice of digital media and culture, asking how diverse media forms impact experiences of identity, citizenship, politics, communication and collaboration. Open only to Media Arts and Practice majors.

IML 103 Digital Studies Studio II (4, Sp) Exploration of fundamental properties and techniques of still images, audio, video and basic interaction. Open only to Media Arts and Practice majors. *Prerequisite:* IML 102.

IML 104 Introduction to Digital Studies (2, FaSpSm) An introduction to the expressive range of screen languages in their cultural, historical, and technological contexts.

IML 140 Workshop in Multimedia Authoring (2, max 4, FaSpSm) Introduction to the expressive potential of multimedia as a critical and creative tool, supplementing traditional forms of academic work.

IML 201 The Languages of Digital Media (4, FaSpSm) An in-depth investigation of the close interrelationships among technology, culture and communication to form a solid foundation for digital authoring. (Duplicates credit in former IML 101.)

IML 295Lm Race, Class and Gender in Digital Culture (4, FaSp) Critical analysis of the categories of race, class and gender within the diverse digital spaces of contemporary culture, from video games to the digital divide.

IML 309 Integrative Design for Mobile Devices (4, FaSp) Hands-on investigation of opportunities and challenges offered by mobile interaction within both cultural and ideological contexts. *Recommended preparation:* IML 102 or IML 104 or IML 201.

IML 310 Professionalism for Media Arts (2, FaSpSm)

Development of documentation and archival strategies, with an emphasis on techniques of personal and professional representation. *Prerequisite:* IML 102 or IML 104 or IML 201.

IML 340 The Praxis of New Media: Digital Argument (2, max 4, FaSp)

An intermediate level course which approaches archived material from multiple perspectives, in order to develop new avenues of expression, education, and research. *Recommended preparation:* IML 102 or IML 104 or IML 201.

IML 346 Methods in Digital Research (2, FaSp)

Emphasizing rigorous multimedia research and authorship strategies, this course prepares students to undertake large-scale digital projects. Open only to juniors, seniors and seniors (fifth year). *Prerequisite:* IML 102 or IML 104 or IML 201.

IML 388 Computational Thinking and Design (4, FaSp)

Exploration of procedural thinking in media, focusing on aesthetic concepts, and on variables, loops, conditional statements as concepts useful in understanding how computers process information. *Recommended preparation:* IML 102 or IML 104 or IML 201.

IML 400 Creative Coding for the Web (4, FaSp)

Analysis and development of scholarly media projects using diverse web authoring strategies, technologies and documentation. *Recommended preparation:* IML 102 or IML 104 or IML 201.

IML 404 Tactical Media (4, FaSp)

Examination of existing and emergent media technologies, focusing on creative and critical tactics for empowering users to explore the full potentials of software and hardware. *Recommended preparation:* IML 102 or IML 104 or IML 201.

IML 420m New Media for Social Change (4, max 8, FaSp)

Creating real social change through multimedia, working in collaboration with a local nonprofit organization.

IML 422 Information Visualization (4, FaSp)

Visualizing information through diverse media platforms, with a focus on critical analysis and hands-on visualization. *Recommended preparation:* IML 102 or IML 104 or IML 201.

IML 440 Thesis Project I (4, Fa)

Exploration of theoretical and practical concerns of interdisciplinary multimedia research and authorship. Open to students in the Honors in Multimedia Scholarship program only. *Prerequisite:* IML 346.

IML 441 Advanced Thesis Project I (4, Fa)

Exploration of theoretical and practical concerns of advanced level interdisciplinary multimedia research and authorship. Open only to Media Arts and Practice majors. *Prerequisite:* IML 346.

IML 444 Thesis Project II (4, Sp)

Production of digital media thesis. Open to students in the Media Arts and Practice major and the Honors in Multimedia Scholarship program only. *Prerequisite:* IML 440 or IML 441.

IML 450 Critical Play and Documentary Games (4, FaSp)

Investigation of the history and theory of games designed to prompt social change, with a hands-on component in the creation of documentary game projects. *Recommended preparation:* IML 102 or IML 104 or IML 201.

IML 466 Digital Studies Symposium (4)

Lectures, presentations, and readings introducing cutting-edge digital media innovations and applications. Analysis of the critical and creative challenges of contemporary digital media practices.

IML 490x Directed Research 1-8, max 12, FaSpSm)

Individual research and production. *Prerequisite:* IML 102 or IML 104 or IML 201.

IML 499 Special Topics (2-4, max 8, FaSpSm)

Selected topics in multimedia literacy.

IML 500 Digital Media Tools and Tactics (2, max 4, FaSpSm)

Introduction to digital scholarship at the graduate level, with a focus on media research ecologies, online portfolios and distributed scholarly presence. Open only to graduate students.

IML 501L Seminar in Contemporary Digital Media (4)

An in-depth examination of the development of digital technologies in their cultural and historic contexts, with equal emphasis on digital analysis and production.

IML 502 Techniques of Information Visualization (4, FaSp)

Critical and practical analysis of scholarly data visualization using diverse platforms. Open only to graduate students.

IML 535 Tangible Computing in the Humanities and Sciences (4, FaSp)

Study and creation of scholarly multimedia projects integrating hardware, software and interactivity to consider new forms for scholarly expression within the realm of pervasive computing.

IML 555 Digital Pedagogies (4, FaSp)

An exploration of varied pedagogical approaches and strategies informed by critical engagement with digital media and networked technologies.

IML 599 Special Topics (2-4, max 8, FaSpSm)

Detailed investigation of new or emergent practices in digital media; special subjects offered by visiting faculty; experimental subjects.

USC Dornsife

Dana and David Dornsife
College of Letters, Arts and Sciences



The USC Dornsife College of Letters, Arts and Sciences connects undergraduates to the local community through outreach programs such as "The Writer in the Community," a course developed by English professors Aimee Bender and Cecilia Woloch. Students teach poetry and fiction to elementary and middle school students in the area surrounding USC.

The USC Dornsife College of Letters, Arts and Sciences is the academic heart of the University of Southern California. The oldest, largest and most diverse of USC's academic divisions, USC Dornsife is composed of approximately 10,000 undergraduate and graduate students and nearly 800 faculty. The breadth and depth of USC Dornsife is vast with more than 30 academic departments and programs across the humanities, social sciences and natural sciences, and dozens of research centers and institutes.

USC Dornsife fosters the liberal arts ethos of small classes and close working relationships between students and faculty within the context of a great research university, where internationally recognized scholars are constantly pursuing new ventures. Undergraduates select from more than 150 courses of study as well as explore opportunities such as overseas studies, service-learning and internships. With more than 75 doctoral degree and master's programs administered through the USC Graduate School, USC Dornsife not only trains the next generation of scholars, but also ensures that America's research enterprise remains competitive.

By immersing its students in deep scholarship and discovery-based learning opportunities, USC Dornsife prepares its graduates to become tomorrow's leaders, prepared to succeed in any field or advanced degree program.

Administration

Steve A. Kay, Ph.D., *Anna H. Bing Dean's Chair in the USC Dornsife College of Letters, Arts and Sciences and Professor of Biological Sciences, Neurology, Physiology and Biophysics*

Dani Byrd, Ph.D., *Vice Dean for Institutional Affairs*

Steven Lamy, Ph.D., *Vice Dean for Academic Programs*

George Sanchez, Ph.D., *Vice Dean for College Diversity and Strategic Initiatives*

Donal Manahan, Ph.D., *Vice Dean for Students*

Charles McKenna, Ph.D., *Vice Dean for Natural Sciences*

Peter C. Mancall, Ph.D., *Vice Dean for the Humanities*

Wendy Wood, Ph.D., *Vice Dean for Social Sciences*

Emily Cavalcanti, *Executive Director for the Office of Communication*

Neil Macready, M.S., *Senior Associate Dean for Advancement*

Ted Budge, *Chief Financial Officer and Senior Associate Dean*

Kathleen Speer, MLS, *Senior Associate Dean*

Jane M. Cody, Ph.D., *Associate Dean for Academic Programs*

Wayne Combs, M.B.A., *Associate Dean for Advancement Operations*

Richard Fliegel, Ph.D., *Associate Dean for Undergraduate Programs*

Susan H. Kamei, J.D., *Associate Dean for Advanced and Professional Programs*

Linda Lopez, Ph.D., *Associate Dean for Diversity and Strategic Initiatives*

Karen Rowan-Badger, B.S., *Assistant Dean for Admission*

James R. McElwain, A.I.A., *Architect*

Departments and Programs

American Studies and Ethnicity

Anthropology

Art History

Biological Sciences

Chemistry

Classics

Comparative Literature

Comparative Studies in Literature and Culture

Earth Sciences

East Asian Languages and Cultures

East Asian Studies Center

Economics

English

Environmental Studies

French and Italian

Gender Studies

Geography

German

Health and Humanity

History

Interdisciplinary Major

International Relations

Judaic Studies

Kinesiology

Liberal Studies

Linguistics

Mathematics

Middle East Studies

Narrative Studies

Neuroscience

Ocean Sciences

Philosophy

Physics and Astronomy

Political Science

Professional Writing

Psychology

Religion

Slavic Languages and Literatures

Sociology

Spanish and Portuguese

Spatial Sciences Institute

Additional Programs Administered by USC Dornsife

American Language Institute

Freshman Seminars

General Education

Joint Educational Project

Learner Centered Curricula

Overseas Studies

Postbaccalaureate Premedical Program

Resident Honors Program

Supplemental Instruction Program

Thematic Option Program

Writing Program

Graduate Studies in Letters, Arts and Sciences

Graduate studies leading to the master's and Ph.D. degrees are available within most departments of the USC Dornsife College of Letters, Arts and Sciences. Candidates for graduate degrees must complete both the departmental requirements listed for each degree and the general requirements set by the Graduate School.

Undergraduate Programs

The USC Dornsife College of Letters, Arts and Sciences awards the Bachelor of Arts (B.A.) and the Bachelor of Science (B.S.) in a number of disciplines. Each degree requires a minimum of 128 units.

Majors

Students in the college may major in a single discipline or combine several interests in an interdisciplinary program.

Selecting a Major

A major may be chosen because the student is especially interested in a subject, because of particular abilities in certain areas, or because it is an especially fitting preparation for a profession. The choice of a major may thus become part of planning for a career. But a choice in the college does not limit the student to a single career or line of work. Liberal arts majors are unusually adaptable; they are suitable preparations for many careers.

A student may declare a major at any time, but is expected to record his or her major in the Office of Academic Records and Registrar at or before the beginning of the junior year or completion of 64 units. This allows sufficient time to fulfill the course requirements of the

major in the student's third and fourth years. For some majors, however, and especially for a major in one of the natural sciences aiming for the B.S. degree, it is advantageous to declare the major sooner, so the program can be spaced over the full four years.

Changing a Major

If, after a major has been declared, the student wishes to change to a different field (or add another field of study to the existing one), a Change of Major form must be filed. The form may be obtained in the Dornsife College Advising Office or the Office of Academic Records and Registrar in John Hubbard Hall. The form must be completed and returned to the Office of Academic Records and Registrar. When a major is changed, the new department adviser must sign the form.

Types of Majors and Major Requirements

Departmental Major (B.A. or B.S. Degree)

A departmental major for the B.A. degree consists of specified lower-division courses and, generally, not less than 24 or more than 32 upper-division units in a single department or discipline. A greater concentration of units in a single discipline is usually required in majors for the B.S. degree than in majors for the B.A. degree.

The specific requirements for each department major will be found in the departmental sections of this catalogue.

Double Major (B.A./B.A. or B.S./B.S.)

A double major consists of two majors which allow the student to earn the same degree, either a B.A. or B.S. degree, within the college. The student must complete the requirements for both majors and whatever other course work is needed to complete 128 units. Combinations of interdepartmental and department majors are also possible. See page 67xx for rules governing the overlap of courses allowed for a double major.

Interdepartmental Majors

Humanities or Social Sciences Major (B.A. Degree)

A humanities or social sciences major consists of not less than 32 upper-division units within departments in the humanities or departments in the social sciences. Of the 32 required upper-division units for the interdepartmental major, 20 are typically taken in one department, and the additional 12 units are taken from applicable courses in the area in which the department of concentration is housed. See the departmental listing for more specific requirements for the interdepartmental major, including lower-division requirements.

Physical Sciences Major (B.S. Degree)

The departments of chemistry, earth sciences, and physics and astronomy, cooperating with one another, offer a physical sciences major in the natural sciences and mathematics. The major requires specific lower-division courses in chemistry, earth sciences, mathematics, physics and 28 upper-division units of major courses in the four departments. Of the 28 required upper-division units, at least four units must be taken in each of the four cooperating departments.

Program Major (B.A. or B.S. Degree)

A program major consists of designated courses and not less than 24 upper-division units chosen from the list of courses which make up the program. The college has a number of special programs, many of which offer majors.

Because programs are often organized around the study of a region or a topic, and hence are not specific to any single discipline, or because two or more disciplines have joined to deal with a common problem, program majors are interdisciplinary. An interdisciplinary major offers unusual range to students who have topical interests. Specific requirements for all program majors are listed under the program titles.

Dual Degree

A dual degree is one that has course work from two schools or two different degree programs within the same school which has been organized into a single program. Listings of graduate dual degrees can be found on page 87xx. The student receives two diplomas.

Progressive Degree Program

A progressive degree program enables a USC Dornsife College of Letters, Arts and Sciences undergraduate to begin work on a master's degree while completing requirements for the bachelor's degree. The progressive degree may be in the same or different departments, but should be in a closely-related field of study. Students in a progressive degree program must fulfill all requirements for both the bachelor's degree and the master's degree except for the combined number of units for the two separate degrees. The master's degree may be awarded at the same time as, but not prior to, the bachelor's degree. The student receives two diplomas. Further details about progressive degrees can be found on page 87xx.

Second Bachelor's Degree

A second bachelor's degree requires a minimum of 32 units beyond the number required for the first. If the first bachelor's degree was earned at USC, a minimum of 32 units for the second must be completed at USC. If the first bachelor's degree was earned at another institution, a minimum of 64 units toward the second must be completed at USC. (See page 60xx, the policy on residence requirement for a second bachelor's degree.)

For some degrees, more than the 32 units beyond the first bachelor's degree will be required because all requirements for both degrees must be met. The student receives a separate diploma for each degree upon completion.

The first and second bachelor's degrees may be completed at the same time but there is no requirement that they be.

Substitution for Major Requirements

If a student wishes an adjustment to the major requirements in his or her department or program, the department adviser may, with the support of the department, substitute a comparable upper-division course for a required one. Substitutions and waivers of USC or

transfer courses for upper-division requirements for programs are to be limited to a combination of 25 percent. Lower-division courses cannot be substituted for upper-division requirements.

Unit Limitation

No more than 40 upper-division units in the major may be applied to any degree under the jurisdiction of the USC Dornsife College of Letters, Arts and Sciences. A student wishing to exceed this limit must obtain the approval of the major department and the dean of undergraduate programs.

Minors

The USC Dornsife College of Letters, Arts and Sciences offers a wide array of minors that can provide unique breadth and complement or enhance the major field of study. Many of the college minors themselves are interdisciplinary and combine classes in two or more college departments or work in college departments with classes or internships in one of USC's professional schools.

Basic Requirement for a Degree from the USC Dornsife College of Letters, Arts and Sciences

For those undergraduate students earning a degree in the USC Dornsife College of Letters, Arts and Sciences, a minimum of 104 units applicable to the degree must be earned in college academic departments. For students graduating with a minor or a second bachelor's degree, this minimum is reduced to 96 units. Other exceptions will be considered by the dean of undergraduate programs in Dornsife College.

Students who are completing major degree programs in a professional school, but whose degree is conferred by Dornsife College, are exempt from this policy.

This policy also applies to transferable courses (see page 58xx).

Units Required Each Semester

The student is expected to complete about 16 units each semester; 18 units are generally considered to be the maximum number in a manageable program. If the student wants to enroll in more than 18 units, he or she may do so, but should consult first with the academic adviser.

Grade Point Average Requirement

A grade point average of at least C (2.0) on all units attempted at USC is required for undergraduate degrees. The college requires a minimum 2.0 grade point average in upper-division courses applied toward the major. Some departments require grades of C or higher in specified courses. A grade point average of at least B (3.0) on all units attempted at USC is required for master's degrees. A grade point average of at least B (3.0) on all units attempted at USC is required for doctoral degrees.

Advising and Academic Services

Debra Bernstein

**Dornsife College Advising Office
College Academic Services Building,
Room 120**

(213) 740-2534

FAX: (213) 740-3664

**Email: cas@dornsife.usc.edu
usc.edu/dept/LAS/cas**

The Dornsife College Advising Office provides a wide range of advising services and programs that integrate students, faculty, staff, academic disciplines and curricula into a meaningful educational experience. Academic advisers work closely with students to help familiarize them with the academic life of the USC Dornsife College of Letters, Arts and Sciences, choose or change their majors and fulfill core requirements so they can graduate in a timely manner.

Academic advising is mandatory for all students entering the USC Dornsife College of Letters, Arts and Sciences until they have completed 32 units at USC. Students without declared majors are required to receive academic advising every semester. All students in the USC Dornsife College of Letters, Arts and Sciences are strongly encouraged to seek individual academic advisement at least once each semester until graduation. Guidance regarding academic requirements, policies and program planning is available in the Dornsife College Advising Office by appointment or on a walk-in basis. Advising in major course requirements is available within the department of the student's major.

The services of a college ombudsman are available to students who have academic concerns that cannot be adequately addressed by the usual mechanisms of consulting instructors, department chairs or other university offices. The ombudsman can be particularly helpful in the case of grade appeals that are complex in nature. The ombudsman functions as an intermediary between the student, the faculty and other offices on campus.

Advising for Pre-law Programs

Students who are interested in going to law school consult one-on-one with academic advisers in the of Dornsife College Advising Office who specialize in this area. Pre-law advisers assist students in crafting an undergraduate academic program designed to lead to law school admission and success. Pre-law students are supported in all aspects of the law school application process, including how to write an effective personal statement and how to request appropriate letters of recommendation.

Pre-law advisers also help students target the most appropriate law school, put students in contact with pre-law societies and notify students of relevant pre-law and law-related events. Pre-law students are also invited to subscribe to an email listserv sponsored by the Dornsife College Advising Office in order to connect with pre-law resources.

Pre-graduate School Advising

The pre-graduate school adviser assists USC undergraduates and alumni interested in applying to all graduate programs other than law and medicine. The adviser helps students determine when and if they should apply to graduate school and guides students in the process of researching and choosing appropriate schools and programs. Students can expect support in such areas as navigating the admissions process, writing statements

of purpose, requesting letters of recommendation, exploring test preparation resources, and identifying and pursuing sources of funding.

Studying Abroad

The Office of Overseas Studies provides semester and year-long opportunities for students to study in other countries. Eligible students can choose between 51 academic programs in 29 countries and study for one or

two semesters. The Office of Overseas Studies is located in the College House, Room 201. For more information, call (213) 740-3636, email overseas@usc.edu or visit usc.edu/overseas.

Dornsife College also offers short term course work abroad in several different formats. For more information, contact the associate dean at (213) 740-4949 or overseas studies at (213) 740-3636.

Office of Pre-Health Advisement

Office of Pre-Health Advisement
3535 S. Figueroa Street, FIG 107
(213) 740-4844
FAX: (213) 740-5653
Email: prehealth@dornsife.usc.edu
dornsife.usc.edu/pre-health
Director: Kenneth Geller, M.D., MS.Ed.

The Office of Pre-Health Advisement serves all current USC students, alumni and post-baccalaureate students who are interested in pursuing a career within the health professions (e.g., medicine, dentistry, pharmacy, etc.).

Pre-health advisers are committed to providing an array of student-centered advisement services and support tools tailored to meet the individual needs, interests and goals of pre-health students. The program values a sense of community; meaningful relationships with students, staff and faculty; academic excellence; leadership; wellness; and learning through community service, clinical exposure, laboratory research and campus organizations.

Pre-health students are supported in all aspects of the health professional school application process, including how to write an effective personal statement

and how to request appropriate letters of recommendation. The Office of Pre-Health Advisement provides a letter of recommendation storage and forwarding service to help streamline the health professional school or graduate school application process. In addition, it offers pre-health curriculum planning; assistance with major and minor selection; workshops and events; and opportunities for clinical, research and volunteer activities. The office encourages involvement in the campus community and pre-health student organizations.

Postbaccalaureate Premedical Program

Dornsife College Advising Office
College Academic Services Building,
Room 120
(213) 740-2534
Email: postbacc@dornsife.usc.edu
chem.usc.edu/postbacc
Director: Larry Singer, Professor of Chemistry

This program allows postbaccalaureate students to complete the science and mathematics core requirements for medical school admission in a supportive environment. It is directed toward students with demonstrated academic achievement in their baccalaureate work, but with little or no prior college-level science and mathematics in their background. The typical student accepted into the program will have a liberal arts baccalaureate degree.

Admission Procedures and Requirements

To be eligible for the Postbaccalaureate Premedical Program, a student must have a baccalaureate degree from an accredited college or university with an overall undergraduate GPA of 3.0 or better. The following are required for admission consideration: (a) a completed application form; (b) transcripts from all colleges and universities attended by the student; (c) two letters of recommendation from professors familiar with the

student's academic credentials and motivation for undertaking an intensive program of study in the science/mathematics core; (d) the student's scores on one of the following standardized tests: ACT, SAT, GRE, GMAT, LSAT.

Admitted students may begin the program at the start of any term, fall, spring or summer. However, all course work must be completed within a 24-month period from the date of entry into the program.

All students admitted into the program should discuss with the coordinator their readiness to begin the science/mathematics core. Occasionally, background course work in science and/or mathematics may be recommended before a student begins the program.

Requirements

Students must complete the following nine course core of science/mathematics courses. Up to two upper-division electives may be substituted for courses in the core. Two courses (8 units) must be at the upper-division level (numbered 300 and above).

CORE COURSES		UNITS
BISC 120L	General Biology: Organismal Biology and Evolution	4
BISC 220L	General Biology: Cell Biology and Physiology	4

CHEM 105aLbL	General Chemistry	4-4
CHEM 322aLbL	Organic Chemistry	4-4
MATH 125	Calculus I	4
PHYS 135aLbL	Physics for the Life Sciences	4-4

UPPER-DIVISION ELECTIVES		UNITS
Either or both of the following two upper-division courses may be substituted for core courses:		
BISC 320L	Molecular Biology	4
BISC 330L	Biochemistry	4

Up to three of the above courses completed with grades of B or better and taken at USC or another accredited college or university prior to entry into the program may be accepted for credit toward the core requirements.

An overall GPA of 3.0 or better must be maintained in all attempted courses, including the two allowed substitute courses BISC 320L and BISC 330L.

Students in the Postbaccalaureate Premedical Program may use the pre-health counseling services of the Dornsife College Advising Office as well as the Pre-Health Advisement Office.

General Education Program

**College Academic Services Building,
Room 200
(213) 740-2961
FAX: (213) 740-4839
usc.edu/ge**

Director: Richard Fliegel, Ph.D.

The university's general education program is structured to provide a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. In thinking over what is necessary, the faculty identified five principal goals:

- (1) to teach students the skills needed for critical thinking, writing and reading;
- (2) to teach these skills in a specific context, i.e., social issues, cultures and traditions, science and society;
- (3) to teach students how to apply these skills so that they can find, evaluate and use the vast amount of information now available via the media, the Internet, new technologies and traditional forms of knowledge;
- (4) to teach students to discern and assess the values that underlie various critical positions, and to articulate their own with coherence and integrity; and
- (5) to encourage a passion for learning.

To achieve these goals, the program is divided into two parts: the first part, called "Foundations," presents courses that give you the "big picture" about (I) the development of western European and American culture, as well as (II) alternative cultural traditions and (III) the basic principles animating scientific inquiry. The second part, called "Case Studies," provides particular opportunities for you to sharpen your critical intelligence by considering specific (IV) applications of science and technology, (V) works of literature, philosophy and art, and (VI) contemporary social issues of urgency and importance. In addition, all students must satisfy writing and diversity requirements to complete the USC core.

The freshman year semester of the writing requirement is co-registered with classes in the Social Issues category and a speaker series, helping to build intellectual community among students and faculty in the general education program.

As you look through the courses in each category, try to reach beyond the disciplines with which you are most familiar and comfortable. Draw broadly from the range of academic expertise and choose a thoughtful, provocative selection of "g" courses as your personal general education program. This academic background will serve you well in the future, as a basis for lifelong learning.

General Education Requirements

Students in all programs are required to take one course that satisfies each of the following six categories.

Foundations:

- | | |
|------------------------------------|------------|
| I. Western Cultures and Traditions | one course |
| II. Global Cultures and Traditions | one course |
| III. Scientific Inquiry | one course |

Case Studies:

- | | |
|----------------------------------|------------|
| IV. Science and Its Significance | one course |
| V. Arts and Letters | one course |
| VI. Social Issues | one course |

General Education Categories

Part One: Foundations

Courses in these categories help students locate themselves culturally, historically and intellectually in an increasingly complex world. The foundations categories are intended to give students a broad conceptual base for their further studies and their roles as informed citizens in the world of the future, training them to think critically and analytically about ideas and events, sharpening their ability to assess arguments and information, and engaging them with the principles of scientific inquiry and primary works of culture and civilization.

Category I. Western Cultures and Traditions

Courses in this category introduce students to an area of academic inquiry traditionally perceived to be central to general education. They stress concepts, values and events in Western history that have shaped contemporary American and European civilization. Courses are distinguished by their historical sweep, which allows students to become aware of the continuing legacies of the past in contemporary culture. Students learn to situate contemporary society in a broad historical context and to think critically about the past and its relationship to the present, while becoming acquainted with the most significant analytic methods by which we attempt to understand the meaning of history. Comparative insights may also be offered with the non-Western cultural traditions studied in Category II.

Category II. Global Cultures and Traditions

Courses in this category introduce students to cultures and civilizations associated with Africa, Asia, Latin America, the Middle East, Native America and Russia. Each course examines distinctive qualities of the cultures studied and seeks to engage and explain those characteristics on their own terms. Students learn to understand the impact of historical development on cultures that interact in the contemporary geopolitical scene and to articulate the role that cultural differences play in those interactions. As a result, they are better prepared to participate actively in an increasingly global cultural and political landscape. Courses in this category are distinguished by their breadth of perspective over a substantial period of time. Comparative insights may also be offered between these cultures and those studied in Category I.

Category III. Scientific Inquiry

In this category, students learn about the process and methods of scientific inquiry, examining the principles underlying a body of scientific knowledge and how those principles were developed. Students learn to evaluate the soundness of scientific arguments and appreciate how current ideas might change in response to new data. Students engage in scientific inquiry through field

experiences or a practical component. A section of laboratory or field experience is required.

As a result, all students should acquire substantive knowledge in science and technology; understand the processes by which scientists investigate and answer scientific questions; and be able to articulate the basic principles used to explain natural phenomena.

Part Two: Case Studies

In this category, students learn why science is important through a focused inquiry into a particular area of knowledge. Analytical techniques and methodologies are demonstrated to illuminate specific topics in the natural and social sciences, the arts and humanities.

Category IV. Science and Its Significance

In this category, students learn why science is important in people's lives. Through a concentrated study of a single area of research or small set of related areas, students learn to articulate the relationships among observed phenomena, the scientific principles those observations inform, their technological applications and their societal implications. Scientific inquiry is understood in the context of its historical setting and philosophical assumptions, as well as its material consequences. A section of laboratory, field experience, and/or discussion and writing is required.

As a result, all students should be able to: connect science and technology to real-world problems and issues, including personal and societal needs; discriminate unsound from well-supported scientific claims about those issues; and talk about science cogently in articulating scientific concepts and their significance for other areas of their lives.

Category V. Arts and Letters

In this category students develop their skills for critical analysis through intense engagement with works of literature, philosophy, visual arts, music and film. The works studied may be associated with a particular country, time period, genre or theme. Students will learn to use techniques of literary and artistic analysis. At the same time they will become familiar with disciplinary and interdisciplinary methods of argument and persuasion. Because intensive reading and writing is demanded in these courses, they will generally be capped at 30 students.

Category VI. Social Issues

Courses in this category prepare students for informed citizenship by teaching them to analyze compelling local, national and/or international issues or problems. Analytical tools are examined systematically so that students may fruitfully apply them to understand a broad range of social and political phenomena. Students learn to assess the validity of arguments and discern the connections between data cited and conclusions drawn.

Students completing this category develop the basic critical skills needed to evaluate and use the vast amount of information concerning social issues now available via the Internet, media and traditional scholarship. They acquire the concepts and confidence necessary to discuss contemporary social issues in an

informed manner and develop a passion for learning that will allow them to engage complex questions about human beings and society.

Limitations

Advanced Placement Credit

Students may satisfy the requirements for Categories I or III with scores of 4 or 5 on specified Advanced Placement Examinations, but no such credit will satisfy the requirements of Categories II, IV, V or VI, or the writing requirement.

Transfer Credit

Students may satisfy the requirements for Categories I, II, III or V with transfer course work completed before the student has enrolled at USC, but no transfer credit will satisfy the requirements for Categories IV or VI. The first semester of the writing requirement may also be satisfied with transfer course work, if it is completed before the student has transferred to USC. However, no transfer course work may be used to satisfy any general education requirements or the writing requirement if those courses are taken after a student has enrolled at USC.

Courses Taken on a Pass/No Pass Basis

No more than four units of credit (or one course) counting toward the general education categories may be taken on a pass/no pass basis. The writing courses cannot be taken on a pass/no pass basis.

Exceptions

A very restricted number of exceptions to the rules governing the general education program has been allowed by the Provost for certain cohorts of students whose programs of study in the major discipline require such exceptions. For more information, see the listings under the individual schools.

Course Listing

For a complete list of general education courses, see the USC Core section, page 63xx.

Other Requirements

In addition, all students at USC must complete a two-course writing requirement and a diversity requirement. All students in the USC Dornsife College of Letters, Arts and Sciences and some in the professional schools (see listing for each school's requirements) must also satisfy the foreign language requirement.

Writing Requirement

In their writing classes students learn to think critically, to build sound arguments and to express their ideas with clarity. The writing requirement comprises two courses (which cannot be taken on a pass/no pass basis). The first, taken during the freshman year, is linked to a course in the Social Issues category of the General Education program. The second, an advanced writing course taken in the junior year, is geared toward students' areas of special interest, such as the arts and humanities, science, law, engineering or business. In this course, students learn to integrate more complex information and construct more sophisticated arguments.

Lower-division Writing Requirement

Most undergraduates take WRIT 140 Writing and Critical Reasoning as their first writing course. WRIT 140 is offered in affiliation with courses from the Social Issues category of the General Education Program (Category VI). Students enroll in this writing course either in the fall or spring of their freshman year.

Certain groups of students from the Schools of Architecture, Engineering, and Music whose schedules do not permit them to register in an affiliated writing class satisfy their first writing requirement by taking WRIT 130 Analytical Writing. Students may not enroll in this alternative course unless expressly permitted to do so by the academic advisers in the specified schools. Students in the Thematic Option program satisfy this requirement with CORE 111.

Some students are better served by taking a preparatory course before they enroll in WRIT 140. Entering freshmen who score below a specified level on the verbal portion of the SAT take the University Writing Examination. Based on the result of this examination, certain students enroll in WRIT 120 Introduction to College Writing or WRIT 121 Introduction to College Writing in a Second Language during their first semester at USC. Clearance to register for these preparatory courses may be obtained at the Writing Program Office.

International students take the University Writing Examination after having completed any course work required by the American Language Institute.

Advanced Writing Requirement

All students at USC (with the exception of Thematic Option students who satisfy the second writing requirement with CORE 112), must complete WRIT 340, a course that will help them write on topics related to their disciplinary or professional interests. Students usually enroll in WRIT 340 Advanced Writing in their junior year and may not take the course earlier than their sophomore year. Different schools at the university offer sections of this course. Students should consult their major department to learn which section of WRIT 340 best complements their program of study.

All sections of WRIT 340 teach students to write clear, grammatical, well-structured prose; to discover and convey complex ideas critically; and to appreciate the nuances of effective argumentation. The principal aim of the requirement is to develop a student's capacity to formulate thoughtful, informed arguments for specific academic, professional and public audiences.

Diversity Requirement

The diversity requirement is designed to provide undergraduate students with the background knowledge and analytical skills to enable them to understand and respect differences between groups of people and to understand the potential resources and conflicts arising from human differences on the contemporary American and international scene. Students will increasingly need to grapple with issues arising from different dimensions of human diversity such as age, disability, ethnicity, gender, language, race, religion, sexual orientation and social class. These dimensions and their social and cultural consequences will have important ramifications for students' personal, professional and intellectual lives, both for the time they are students and in later life. Students will gain exposure to analytical frameworks

within which these issues are to be understood and addressed, including social, political, cultural, ethical and public policy analysis. It is the university's goal to prepare students through the study of human differences for responsible citizenship in an increasingly pluralistic and diverse society.

Course Requirement

The diversity requirement must be met by all USC students. It can be met by passing any one course from the list of courses carrying the designation "m" for multiculturalism on page 66xx. In addition to fulfilling the diversity requirement, some of the courses on the list also meet general education requirements; others also meet major requirements; still others meet only the diversity requirement but count for elective unit credit.

Foreign Language Requirement

Students may satisfy the foreign language requirement only by (1) earning a passing grade in Course III of a foreign language sequence at USC or its equivalent elsewhere or (2) scoring on the placement examination at a level considered by the department as equivalent to the completion of Course III or (3) scoring on a national or statewide examination at a level set by the department and approved by the USC Dornsife College of Letters, Arts and Sciences. Students who can supply proof of at least two years of full-time secondary schooling beyond the age of 14 taught in a foreign language may request exemption from the foreign language requirement.

All students earning degrees granted by or under the jurisdiction of the USC Dornsife College of Letters, Arts and Sciences or earning degrees in programs of other schools that require three semesters of foreign language who do not meet the criteria of (1), above, must take a placement examination to determine their level of language proficiency. Placement in elementary and intermediate foreign language courses is made by the appropriate placement examination. Transfer courses equivalent to a USC elementary or intermediate language course fulfill the prerequisite for the next course in the sequence, but students may be advised, although not required, to repeat without additional credit a semester or semesters of instruction if their skills are judged insufficient at the time of testing.

All students who as freshmen enrolled in degree programs that have a foreign language requirement are expected to fulfill that requirement by the time they have completed 64 units at USC. Students who do not satisfy the foreign language requirement before the completion of 48 units at USC will have a "mandatory advisement requirement" warning them of the need to complete the foreign language requirement. Students who do not satisfy the requirement before the completion of 64 units at USC will be required to seek approval to register.

Students admitted as transfers for whom foreign language is a requirement should fulfill it before they have completed 48 units at USC. Students who do not satisfy the foreign language requirement before the completion of 32 units at USC will have a "mandatory advisement requirement" warning them of the need to complete the foreign language requirement. Students who do not satisfy the requirement before the completion of 48 units at USC will be required to seek approval to register.

Students admitted into programs without a foreign language requirement who subsequently make a change of major into a program with a foreign language requirement must satisfy the requirement before completion of 48 units at USC after switching into the major.

International students whose native language is not English are exempt from the foreign language requirement. Students with advanced skills in languages other

than those taught at USC may request exemption from the foreign language requirement if (1) they can supply proof of at least two years of full-time secondary schooling taught in a foreign language beyond the age of 14, or (2) if they can pass a competency exam testing for advanced language skills and administered at USC subject to the availability of suitable academic examiners; the competency exam will test proficiency in speaking,

reading and writing skills. Students with documented learning disabilities or physical impairments inhibiting language acquisition may petition for substitution.

Course Listing

For a complete list of diversity courses, see the USC Core section, Diversity Course List, page 66xx.

College-wide Courses

Courses of Instruction

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

ARTS AND LETTERS (ARLT)

ARLT 100g Arts and Letters (4, FaSp) Critical analysis of significant works of literature, philosophy, visual arts, music and/or film; intensive reading and writing to develop knowledge of analytical techniques in the humanities. Limited to freshmen and sophomores. (Duplicates credit in ARLT 101 and in former LTA 100 and in former LTA 101.)

ARLT 101g Studies in Arts and Letters (4, FaSp) Critical analysis of significant works of literature, philosophy, visual arts, music and/or film; intensive reading and writing to develop knowledge of analytical techniques in the humanities. Limited to students with sophomore status or higher. (Duplicates credit in ARLT 100 and in former LTA 100 and in former LTA 101.)

ARLT 105g First Year Seminar: Arts and Letters (4, FaSpSm) Critical analysis of significant literary, philosophical, and artistic texts; intensive reading and writing to develop analytical skills in interpreting and responding to original works. Open only to freshmen. (Duplicates credit in ARLT 100g and ARLT 101g.)

UNIVERSITY OF SOUTHERN CALIFORNIA (USC)

USC 101 Honors Research Apprenticeship (1, max 2)

Students work directly with faculty on faculty research projects, gain experience in the process of research and thereby contribute to new scholarship.

USC 250 The Academic Culture (2, FaSp) Study the meaning of culture in society, experience the culture of learning on campus, and examine the relationship between the two. Topics will vary. Graded CR/NC. Not open to freshmen.

Advanced and Professional Programs

3501 Trousdale Parkway
Taper Hall 355
Los Angeles, CA 90089-0355
Associate Dean: Susan H. Kamei, J.D.

The Office of Advanced and Professional Programs administers the USC Dornsife College of Letters, Arts and Sciences multidisciplinary graduate programs not housed in traditional departments or units.

Master of Liberal Studies
(213) 740-1349
FAX: (213) 740-5002
Email: mls@dornsife.usc.edu
dornsife.usc.edu/mls

Director: Susan H. Kamei, J.D. (Associate Dean, Advanced and Professional Programs)

A multidisciplinary degree program, the Master of Liberal Studies (MLS) is designed for motivated, college-educated individuals who wish to further their intellectual growth and pursue graduate work part-time in the evenings. See page 393xx for course requirements.

Master of Professional Writing
(213) 740-3252
FAX: (213) 740-5775
Email: mpw@dornsife.usc.edu
dornsife.usc.edu/mpw

Director: Brighde Mullins, MFA

The program is designed for individuals pursuing writing as a career in fiction, nonfiction, screenwriting, television writing and theatre. See page 447xx for course requirements.

American Language Institute

Jefferson Building 206
(213) 740-0079
FAX: (213) 740-8549
Email: aliusc@usc.edu
dornsife.usc.edu/ali
Director: James Valentine, Ph.D.

Assistant Professors (Teaching): Lucienne Aarsen, M.A.; Reka Clausen, M.A.

Senior Lecturer: Juli Ann Kirkpatrick, M.A.

Lecturers: Kimberley Briesch-Sumner, M.A.; B. Victoria Byczkiewicz Cutler, M.A.; Barry Griner, M.A.; Nina Kang, M.A.; Zsuzsu Londe, Ph.D.; Olivia Martinez, M.A.;

Mary Ann Murphy, M.A.; James Polk, Ph.D.; Eric H. Roth, M.A.; Anastassia Tzoytzoyrakos, M.A.

Purpose of the Program

The American Language Institute provides instruction in English as a Second Language for international students who need to improve their English language skills in order to participate successfully in their degree programs. Before beginning studies with ALI, all students must be admitted to the university in a degree program. The institute also provides student advisement.

Placement in the Program

Most international students entering USC must take the International Student English Examination (ISE).

The examination is offered immediately prior to the beginning of classes each semester. The purpose of this examination is to evaluate the level of a student's proficiency in English and to determine how well prepared the student is to undertake his or her degree studies in English. On the basis of the scores achieved, students are placed at the appropriate levels of instruction or are exempted from having to receive English language instruction.

Elective Credit

Undergraduates may earn up to 12 units of credit toward their degree for ALI courses numbered 100 or above. Some departmental restrictions may apply.

Limitation on Enrollment

International students placed into ALI classes must commence their ALI course work in their first semester at USC, and must register in ALI courses each fall and spring semester until their ALI requirements are satisfied. Students must successfully complete their ALI required courses within four semesters in order to remain academically eligible to pursue a degree program. Students who receive a final grade of "No Credit" more than once in any of their ALI required classes will not be allowed to continue to complete their ALI requirement.

Students not meeting the ALI requirement will not be allowed to continue at USC. The Committee on Academic Policies and Procedures will consider appeals if submitted within 10 working days of being dropped from ALI. Contact the Academic Review Department (Hubbard Hall 113) for details.

Courses of Instruction

AMERICAN LANGUAGE INSTITUTE (ALI)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

ALI 090x Beginning English as a Second Language for International Students (12) Required for international students assessed to have no proficiency in English by the International Student English Examination (ISE). Not available for degree credit. Graded CR/NC.

ALI 103x Elective Courses in English as a Second Language for International Students (2-8, FaSpSm) Specialized tutorial classes in listening, speaking, reading, or writing. A maximum of 4 units may be counted toward a degree. Graded CR/NC.

ALI 134 Intermediate Oral Skills (1, FaSpSm) Required for international students whose oral skills are assessed to be at the intermediate level by the International Student English Examination (ISE) or previous ALI course. Graded CR/NC.

ALI 135 Intermediate Writing Skills (1, FaSpSm) Required for international students whose writing skills are assessed to be at the intermediate level by the International Student English Examination (ISE) or previous ALI course. Graded CR/NC.

ALI 144 High Intermediate Oral Skills (1, FaSpSm) Required for international students whose oral skills are assessed to be at the high intermediate level by the International Student English Examination (ISE) or previous ALI course. Graded CR/NC.

ALI 145 High Intermediate Writing Skills (1, FaSpSm) Required for international students whose writing skills are assessed to be at the high intermediate level by the International Student English Examination (ISE) or previous ALI course. Graded CR/NC.

ALI 200 Elementary English as a Second Language for International Students (12, FaSpSm) Required for international students assessed to be at the beginning level by the International Student English Examination (ISE) or by the completion of a lower level ALI course. Graded CR/NC.

ALI 211 Low Intermediate ESL (II) for International Students (6) Required for international students assessed to have intermediate level writing skills, but pre-intermediate level oral skills or by completion of a lower level ALI course. Graded CR/NC.

ALI 224 Low Intermediate Oral Skills (4, FaSpSm) Required for international students whose oral skills are assessed to be at the low intermediate level by the International Student English Examination (ISE) or previous ALI course. (Duplicates credit in former ALI 210.) Graded CR/NC.

ALI 225 Low Intermediate Writing Skills (4, FaSpSm) Required for international students whose writing skills are assessed to be at the low intermediate level by the International Student English Examination (ISE) or previous ALI course. (Duplicates credit in former ALI 210.) Graded CR/NC.

ALI 234 Intermediate Oral Skills (2, FaSpSm) Required for international students whose oral skills are assessed to be at the intermediate level by the International Student English Examination (ISE) or previous ALI course. (Duplicates credit in former ALI 220.) Graded CR/NC.

ALI 235 Intermediate Writing Skills (2, FaSpSm) Required for international students whose writing skills are assessed to be at the intermediate level by the International Student English Examination (ISE) or previous ALI course. (Duplicates credit in former ALI 220.) Graded CR/NC.

ALI 242 High Intermediate Pronunciation (2, FaSpSm) Required for international students whose pronunciation skills are assessed at the high intermediate level by the International Student English Examination (ISE) or previous ALI course. Graded CR/NC.

ALI 244 High Intermediate Oral Skills (2, FaSpSm) Required for international students whose oral skills are assessed to be at the high intermediate level by the International Student English Examination (ISE) or previous ALI course. (Duplicates credit in former ALI 230 and ALI 240.) Graded CR/NC.

ALI 245 High Intermediate Writing Skills (2, FaSpSm) Required for international students whose writing skills are assessed to be at the high intermediate level by the International Student English Examination (ISE) or previous ALI course. (Duplicates credit in former ALI 231 and ALI 240.) Graded CR/NC.

ALI 246 Intermediate Oral Communication for ITAs (3, FaSpSm) Required for international teaching assistants (ITAs) whose oral skills are assessed to be at the intermediate level by the ITA exam or previous ALI course. Graded CR/NC.

ALI 252 Advanced Pronunciation (3, FaSpSm) Required for international students whose pronunciation skills are assessed at the advanced level by the International Student English Examination (ISE) or previous ALI course. Graded CR/NC.

ALI 254 Advanced Oral Skills (2, FaSpSm) Required for international students whose oral skills are assessed to be at the advanced level by the International Student English Examination (ISE) or previous ALI course. (Duplicates credit in former ALI 259.) Graded CR/NC.

ALI 255 Advanced Writing Skills (2, FaSpSm) Required for international students whose writing skills are assessed to be at the advanced level by the International Student English Examination (ISE) or previous ALI course. (Duplicates credit in former ALI 258.) Graded CR/NC.

ALI 256 High Intermediate Oral Communication for ITAs (3, FaSpSm) Required for international teaching assistants (ITAs) whose oral skills are assessed to be at the high intermediate level by the ITA exam or previous ALI course. Graded CR/NC.

ALI 270 Advanced Oral Communication for ITAs (3, FaSpSm) Classroom interaction skills for international teaching assistants, with a focus on the language needed to lead discussions and make presentations. Open to international teaching assistants only. Graded CR/NC.

ALI 271 Language Tutorial for International Teaching Assistants (2, FaSpSm) Individualized tutorial on the language and oral skills used by international teaching assistants in the performance of his or her duties. Based on observation and feedback. Open to international teaching assistants only.

ALI 274 Advanced Academic and Professional Spoken English (2, FaSpSm) Required for International Teaching Assistants (ITAs) who, after taking the ITA Oral Interview Exam, are determined to need the particular skills taught in this course. Graded CR/NC.

ALI 275 Writing for Publication and Dissertations (2, FaSpSm) Elective course for international graduate students focusing on conventions of advanced academic writing and problems in syntax, vocabulary, and register for writing and/or publishing dissertations. Graded CR/NC.

American Studies and Ethnicity

3620 S. Vermont Ave., KAP 462
 Los Angeles, CA 90089-2534
 (213) 740-2426
 FAX: (213) 821-0409
 Email: aseinfo@dornsife.usc.edu
 dornsife.usc.edu/ase
 Chair: Nayan B. Shah, Ph.D.

Director, Graduate Studies: Lanita Jacobs, Ph.D.

Director, Undergraduate Studies: Francille Rusan Wilson, Ph.D.

Director, American Studies: Francille Rusan Wilson, Ph.D.

Director, African American Studies: Francille Rusan Wilson, Ph.D.

Director, Asian American Studies: Dorinne Kondo, Ph.D.

Director, Chicano/Latino Studies: Veronica Terriquez, Ph.D.

Professors: Alice Echols, Ph.D.* (*English*); Felix Gutierrez, Ph.D. (*Journalism*); Judith Halberstam, Ph.D.; Sherman Jackson, Ph.D.* (*Religion*); Dorinne Kondo, Ph.D. (*Anthropology*); Manuel Pastor, Jr., Ph.D.* (*Sociology*); Laura Pulido, Ph.D.; David Román, Ph.D.* (*English*); John Carlos Rowe, Ph.D. (*English*); George J. Sánchez, Ph.D.*; Nayan B. Shah, Ph.D.

Associate Professors: Sarah Banet-Weiser, Ph.D.* (*Communication*); Judith Jackson Fossett, Ph.D.* (*English*); Macarena Gómez-Barris, Ph.D.; Sarah Gualtieri, Ph.D.* (*History*); Thomas Gustafson, Ph.D.* (*English*); Stanley Huey, Jr., Ph.D. (*Psychology*); Lanita Jacobs, Ph.D.* (*Anthropology*); Kara Keeling, Ph.D. (*Cinematic Arts*); Joshua David Kun, Ph.D. (*Communication*); Lon Kurashige, Ph.D. (*History*); Curtis Marez, Ph.D. (*Cinematic Arts*); Maria-Elena Martinez, Ph.D. (*History*); Teresa McKenna, Ph.D. (*English*); Viet Nguyen, Ph.D.* (*English*); Leland Saito, Ph.D. (*Sociology*); Francille Rusan Wilson, Ph.D.

Assistant Professors: Juan De Lara, Ph.D.; Edwin Hill, Ph.D. (*French and Italian*); Shana Redmond, Ph.D.

*Recipient of university-wide or college teaching award.

American Studies and Ethnicity integrates humanistic and social scientific perspectives and brings them to bear on an examination of the United States with a particular emphasis on comparative study of the peoples, cultures, history and social issues of the Western United States. The department offers four separate majors in American Studies and Ethnicity, African American Studies, Asian American Studies, and Chicano/Latino Studies; and minors in American Studies and Ethnicity, American Popular Culture and Jewish American Studies. The graduate program offers a Ph.D. for students interested in broad interdisciplinary training at an advanced

level to study the peoples, cultures and institutions of the United States in courses that integrate modes of inquiry from the humanities and the social sciences.

Drawing upon the cultural resources of a cosmopolitan city on the Pacific Rim and upon the strength and diversity of its professional schools as well as departments in the USC Dornsife College of Letters, Arts and Sciences, these degree programs provide a richly interdisciplinary curriculum that is unique for its constitution of American Studies and Ethnic Studies as comparative and interethnic program that takes as its focus a region — Los Angeles, California and the West — marked by challenging social and cultural changes.

Honors Program

The program offers a two-semester honors program for qualified students, first identified in AMST 350 or by the program adviser. Students spend their first semester in the program in an honors senior seminar, AMST 492, focused on developing their research and methods for the honors thesis. During the second semester, all honors students are required to take AMST 493 in which each completes a thesis project on a topic of his or her own choosing under faculty direction. Contact the program adviser for further information. To graduate with honors, program majors must successfully complete an honors thesis and have a minimum GPA of 3.5 in their major course work.

Undergraduate Degrees

American Studies and Ethnicity offers challenging and diverse opportunities to study the peoples, cultures and institutions of the United States in interdisciplinary courses. Combining the study of history with literature, the arts and the social sciences, American Studies and Ethnicity seeks to bring together these various disciplines and modes of inquiry in a common project: the effort to understand the diverse peoples and cultures that have composed the United States and to provide critical perspectives on the words, deeds, myths and material practices that have shaped this country in its full regional, ethnic, class and gender diversity. An education in American Studies and Ethnicity will be particularly appropriate for students interested in pursuing careers in law, journalism, government, foreign service, social work, international business, public administration and education.

American Studies and Ethnicity is administered by an executive committee comprising the chair, directors of the four majors and other faculty members. In addition to the college academic adviser, the directors of the majors serve as advisers to majors and minors, providing, in conjunction with the sequence of courses, the opportunity for students to undertake an interdisciplinary concentration under close faculty supervision. It is recommended that students meet with the appropriate major director to plan a coherent set of courses to fulfill the major or minor requirements.

Bachelor of Arts, American Studies and Ethnicity Program Major Requirements

Ten courses in American Studies and Ethnicity or courses certified for American Studies and Ethnicity credit are required. The 10 courses must be distributed as follows: the three core requirement courses of AMST 200, AMST 350 and AMST 498; one course from each of the following three lists: *History*, *Literature and Culture*, and *Social and Political Issues*; and additional elective courses for a total of 16 units chosen from the courses certified in American Studies and Ethnicity at the 300 level or above.

CORE REQUIREMENTS		UNITS
AMST 200	Introduction to American Studies and Ethnicity	4
AMST 350	Junior Seminar in American Studies and Ethnicity: Theories and Methods	4
AMST 498*	Senior Seminar in American Studies and Ethnicity	4
*Honors students will substitute AMST 492 Research Methods in American Studies and Ethnicity.		

100/200/300/400-LEVEL REQUIRED COURSES

One course from each of the following categories:

<i>History</i>		
AMST 250	The African Diaspora	4
AMST 373	History of the Mexican American	4
AMST 378	Introduction to Asian American History	4
AMST 379	Arabs in America	4
HIST 100	The American Experience	4
HIST 354	Mexican Migration to the United States	4
HIST 355	The African-American Experience	4
HIST 380	American Popular Culture	4
HIST 457	The American West	4
HIST 458	History of California	4

Literature and Culture

AHIS 365	African American Art	4
AHIS 465	Studies in American Art	4
AHIS 475	Blackness in American Visual Culture	4
AMST 285	African American Popular Culture	4
AMST 377	Legacies of Viet Nam	4
AMST 385	African American Culture and Society	4
AMST 448	Chicano and Latino Literature	4
AMST 449	Asian American Literature	4
COMM 458	Race and Ethnicity in Entertainment and the Arts	4
ENGL 263	American Literature	4
ENGL 392	Visual and Popular Culture	4
ENGL 442	American Literature, 1920 to the Present	4
ENGL 445	The Literatures of America: Cross-Cultural Perspectives	4

ENGL 446	African-American Poetry and Drama	4	UPPER-DIVISION ELECTIVE COURSES			UNITS	AMST 498*	Senior Seminar in American Studies and Ethnicity	4	
REL 336	Re-viewing Religion in Asian America	4	Additional courses for a total of 16 units from the lists above or below, or other American Studies and Ethnicity courses with the approval of the Chicano/Latino Studies director, 300 level or higher. No more than two total courses in the major may be taken outside the college.							
REL 483	Religion and Popular Culture in the United States	4					*Honors students will substitute AMST 492 Research Methods in American Studies and Ethnicity.			
			200/300/400-LEVEL REQUIRED COURSES			UNITS				
Social and Political Issues			AMST 392			Undergraduate Research Methods	2	One course from each of the following categories:		
AMST 101	Race and Class in Los Angeles	4	AMST 490x			Directed Research	1–8, max 12	AMST 250	The African Diaspora	4
AMST 202	Interethnic Diversity in the West	4	AMST 493			Senior Honors Thesis in American Studies and Ethnicity	4	HIST 355	The African-American Experience	4
AMST 206	The Politics and Culture of the 1960s	4	AMST 499			Special Topics	2–4, max 8	HIST 455	Advanced Topics in African-American History	4
AMST 220	The Making of Asian America	4						Literature and Culture		
AMST 274	Exploring Ethnicity through Film	4	Bachelor of Arts, American Studies and Ethnicity (African American Studies)							
AMST 285	African American Popular Culture	4	African American Studies is a multidisciplinary program designed to provide students with a critical understanding of the historical, cultural, social and political experience of African Americans, with a particular emphasis on the development and culture of the African American communities in California and the West as well as on both historical and contemporary effects of global issues on African American communities. By drawing upon courses in American Studies and Ethnicity and by emphasizing comparative as well as interdisciplinary study, this program offers training in the analytic tools and methods of interpretation appropriate for studying the African American experience in its particularity and ethnic and cultural study in general. The program is particularly appropriate for students interested in integrating studies in the humanities and social sciences and for students preparing to work and interact with diverse communities and cultures in the United States and abroad in such fields as education, human services, business, journalism and public administration.							
AMST 301	America, the Frontier, and the New West	4	African American Studies is administered by an executive committee comprising the chair, directors of the four majors and other faculty members. In addition to the college academic adviser, the directors of the majors serve as advisers to majors and minors, providing, in conjunction with the sequence of courses, the opportunity for students to undertake an interdisciplinary concentration under close faculty supervision. It is recommended that students meet with the appropriate major director to plan a coherent set of courses to fulfill the major or minor requirements.							
AMST 320	Social Construction of Race and Citizenship	4								
AMST 340	Latina/o L.A.	4								
AMST 348	Race and Environmentalism	4								
AMST 353	Race and Racism in the Americas	4								
AMST 357	Latino Social Movements	4								
AMST 365	Leadership in the Community — Internship	4								
AMST 389	Carceral Geographies	4								
AMST 395	African American Humor and Culture	4								
AMST 446	Cultural Circuits in the Americas	4								
AMST 452	Race, Gender and Sexuality	4								
AMST 466	The Psychology of African Americans	4								
ANTH 240	Collective Identity and Political Violence: Representing 9/11	4								
JOUR 466	People of Color and the News Media	4								
POSC 320	Urban Politics	4								
POSC 328	Asian American Politics	4								
POSC 421	Ethnic Politics	4								
POSC 424	Political Participation and American Diversity	4								
POSC 427	Black Politics in the American Political System	4								
POSC 428	Latino Politics	4								
PSYC 462	Minority Mental Health	4								
REL 333	Religion in the Borderlands	4								
SOCI 100	Los Angeles and the American Dream	4								
SOCI 342	Race Relations	4								
SOCI 355	Immigrants in the United States	4								
SOCI 356	Mexican Immigrants in Sociological Perspective	4								
SOCI 366	Chicana and Latina Sociology	4								
SOCI 375	Asian Americans: Ethnic Identity	4	CORE REQUIREMENTS			UNITS				
SOCI 376	Contemporary Issues in Asian American Communities	4	AMST 200	Introduction to American Studies and Ethnicity	4	UPPER-DIVISION ELECTIVE COURSES				
SOCI 432	Racial and Ethnic Relations in a Global Society	4	AMST 350	Junior Seminar in American Studies and Ethnicity: Theories and Methods	4	UNITS				
						Additional courses for a total of 16 units from the lists above or below, or other American Studies and Ethnicity courses with the approval of the African American Studies director, 300 level or higher. No more than two total courses in the major may be taken outside the college.				
						AMST 301	America, the Frontier, and the New West	4		
						AMST 320	Social Constructions of Race and Citizenship	4		
						AMST 353	Race and Racism in the Americas	4		
						AMST 490x	Directed Research	1–8, max 12		
						AMST 493	Senior Honors Thesis in American Studies and Ethnicity	4		

AMST 499	Special Topics	2–4, max 8
COMM 458	Race and Ethnicity in Entertainment and the Arts	4
POSC 424	Political Participation and American Diversity	4
SOCI 432	Racial and Ethnic Relations in a Global Society	4

Bachelor of Arts, American Studies and Ethnicity (Asian American Studies)

Asian American Studies is a multidisciplinary program designed to provide students with a critical understanding of the historical, cultural, social and political experience of Asian Pacific Americans, with a particular emphasis on the development and culture of the Asian American communities in California and the West as well as on both historical and contemporary effects of global issues on Asian American communities. By drawing upon courses in American Studies and Ethnicity and by emphasizing comparative as well as interdisciplinary study, this program offers training in the analytic tools and methods of interpretation appropriate for studying the Asian American experience in its particularity and ethnic and cultural study in general. The program is particularly appropriate for students interested in integrating studies in the humanities and social sciences and for students preparing to work and interact with diverse communities and cultures in the United States and abroad in such fields as education, human services, business, journalism and public administration.

Asian American Studies is administered by an executive committee comprising the chair, directors of the four majors and other faculty members. In addition to the college academic adviser, the directors of the majors serve as advisers to majors and minors, providing, in conjunction with the sequence of courses, an opportunity for students to undertake an interdisciplinary concentration under close faculty supervision. It is recommended that students meet with the appropriate major director to plan a coherent set of courses to fulfill the major or minor requirements.

Program Major Requirements

Ten courses in Asian American Studies, or courses certified for Asian American Studies credit, are required. The 10 courses must be distributed as follows: the three core requirement courses of AMST 200, AMST 350 and AMST 498; one course from each of the following three lists: *History*, *Literature and Culture*, and *Social and Political Issues*; and additional elective courses for a total of 16 units chosen from the courses certified in Asian American Studies at the 300 level or above.

CORE REQUIREMENTS		UNITS
AMST 200	Introduction to American Studies and Ethnicity	4
AMST 350	Junior Seminar in American Studies and Ethnicity: Theories and Methods	4
AMST 498*	Senior Seminar in American Studies and Ethnicity	4

*Honors students will substitute AMST 492 Research Methods in American Studies and Ethnicity.

200/300/400-LEVEL REQUIRED COURSES

One course from each of the following categories:

<i>History</i>		
AMST 378	Introduction to Asian American History	4
<i>Literature and Culture</i>		
AMST 377	Legacies of Viet Nam	4
AMST 449	Asian American Literature	4
REL 336	Re-viewing Religion in Asian America	4
<i>Social and Political Issues</i>		
AMST 220	The Making of Asian America	4
AMST 365	Leadership in the Community — Internship	4
AMST 389	Carceral Geographies	4
POSC 328	Asian American Politics	4
SOCI 375	Asian Americans: Ethnic Identity	4
SOCI 376	Contemporary Issues in Asian American Communities	4

UPPER-DIVISION ELECTIVE COURSES

Additional courses for a total of 16 units from the lists above or below, or other American Studies and Ethnicity courses with the approval of the Asian American Studies director, 300 level or higher. No more than two total courses in the major may be taken outside the college.

AMST 301	America, the Frontier, and the New West	4
AMST 320	Social Construction of Race and Citizenship	4
AMST 348	Race and Environmentalism	4
AMST 353	Race and Racism in the Americas	4
AMST 490x	Directed Research	1–8, max 12
AMST 493	Senior Honors Thesis in American Studies and Ethnicity	4
AMST 499	Special Topics	2–4, max 8
COMM 458	Race and Ethnicity in Entertainment and the Arts	4
POSC 424	Political Participation and American Diversity	4
SOCI 432	Racial and Ethnic Relations in a Global Society	4

Bachelor of Arts, American Studies and Ethnicity (Chicano/Latino Studies)

Chicano/Latino Studies is a multidisciplinary program designed to provide students with a critical understanding of the historical, cultural, social and political experience of Chicanos and Latinos, with a particular emphasis on the development and culture of the Chicano/Latino communities in California and the West as well as on both historical and contemporary effects of global issues on Chicano/Latino communities. By drawing upon courses in American Studies and Ethnicity and by emphasizing comparative as well as interdisciplinary study, this program offers training in the analytic tools and methods of interpretation appropriate for studying the Chicano/Latino experience in its particularity and ethnic and cultural study in general. The program is particularly appropriate for students interested in

integrating studies in the humanities and social sciences and for students preparing to work and interact with diverse communities and cultures in the United States and abroad in such fields as education, human services, business, journalism and public administration.

Chicano/Latino Studies is administered by an executive committee comprising the chair, directors of the four majors, and other faculty members. In addition to the college academic adviser, the directors of the majors serve as advisers to majors and minors, providing, in conjunction with the sequence of courses, an opportunity for students to undertake an interdisciplinary concentration under close faculty supervision. It is recommended that students meet with the appropriate major director to plan a coherent set of courses to fulfill the major or minor requirements.

Program Major Requirements

Ten courses in Chicano/Latino Studies, or courses certified for Chicano/Latino Studies credit, are required. The 10 courses must be distributed as follows: the three core requirement courses of AMST 200, AMST 350 and AMST 498; one course from each of the following three lists: *History*, *Literature and Culture*, and *Social and Political Issues*; and additional elective courses for a total of 16 units chosen from the courses certified in Chicano/Latino Studies at the 300 level or above.

CORE REQUIREMENTS		UNITS
AMST 200	Introduction to American Studies and Ethnicity	4
AMST 350	Junior Seminar in American Studies and Ethnicity: Theories and Methods	4
AMST 498*	Senior Seminar in American Studies and Ethnicity	4

*Honors students will substitute AMST 492 Research Methods in American Studies and Ethnicity.

200/300/400-LEVEL REQUIRED COURSES

One course from each of the following categories:

<i>History</i>		
AMST 373	History of the Mexican American	4
HIST 354	Mexican Migration to the United States	4
<i>Literature and Culture</i>		
AMST 448	Chicano and Latino Literature	4
SPAN 413	Social and Geographic Varieties of Spanish	4

Social and Political Issues

AMST 101	Race and Class in Los Angeles	4
AMST 140	Borderlands in a Global Context	4
AMST 274	Exploring Ethnicity through Film	4
AMST 340	Latina/o L.A.	4
AMST 357	Latino Social Movements	4
AMST 365	Leadership in the Community — Internship	4
AMST 389	Carceral Geographies	4
AMST 446	Cultural Circuits in the Americas	4

POSC 428	Latino Politics	4
PSYC 462	Minority Mental Health	4
REL 333	Religion in the Borderlands	4
SOC 100	Los Angeles and the American Dream	4
SOCI 356	Mexican Immigrants in a Diverse Society	4
SOCI 366	Chicana and Latina Sociology	4

UPPER-DIVISION ELECTIVE COURSES UNITS

Additional courses for a total of 16 units from the lists above or below, or other American Studies and Ethnicity courses with the approval of the Chicano/Latino Studies director, 300 level or higher. No more than two total courses in the major may be taken outside the college.

AMST 301	America, the Frontier, and the New West	4
AMST 320	Social Construction of Race and Citizenship	4
AMST 348	Race and Environmentalism	4
AMST 353	Race and Racism in the Americas	4
AMST 392	Undergraduate Research Methods	2
AMST 452	Race, Gender and Sexuality	4
AMST 490X	Directed Research	1–8, max 12
AMST 493	Senior Honors Thesis in American Studies and Ethnicity	4
AMST 499	Special Topics	2–4, max 8
COMM 458	Race and Ethnicity in Entertainment and the Arts	4
POSC 424	Political Participation and American Diversity	4
SOCI 432	Racial and Ethnic Relations in a Global Society	4

American Studies and Ethnicity Minor Course Requirements

For the minor in American Studies and Ethnicity, five courses in American Studies and Ethnicity, or courses certified for American Studies and Ethnicity credit, are required. The five courses must be distributed as follows: two core requirement courses and three additional elective courses chosen from the courses certified in American Studies and Ethnicity at the 300 level or above.

CORE REQUIREMENTS	UNITS
AMST 200 Introduction to American Studies and Ethnicity	4
AMST 350 Junior Seminar in American Studies and Ethnicity: Theories and Methods	4

UPPER-DIVISION ELECTIVE COURSES UNITS

Three courses from the American Studies and Ethnicity major lists, or other American Studies and Ethnicity courses with the approval of the American Studies and Ethnicity director, at the 300 level or higher. No more than one course in the minor may be taken outside the college.

Minor in American Popular Culture

The interdisciplinary minor in American Popular Culture helps students to assess from a variety of perspectives the icons and ideas they encounter every day, to think critically about the images and assertions of the mass media and commercial culture, and to see the experience of popular culture as it interacts with questions of gender and ethnicity in the American context. Students choose five classes, including one upper-division elective, from a curriculum organized to explore: critical approaches to popular culture; gender and ethnicity in American popular culture; and popular culture in the arts. Twenty units are required, four at the lower-division and 16 at the upper-division level.

LOWER-DIVISION REQUIREMENTS UNITS

Choose one course (4 units)	
AMST 206	The Politics and Culture of the 1960s 4
AMST 285	African American Popular Culture 4

UPPER-DIVISION REQUIREMENTS UNITS

Choose four courses (16 units), at least one from each of the groups below.

<i>Critical Approaches to Popular Culture: choose one (4 units)</i>	
AMST 301	America, the Frontier, and the New West 4
COLT 365	Literature and Popular Culture 4
COMM 384	Interpreting Popular Culture 4
ENGL 392	Visual and Popular Culture 4
HIST 380	American Popular Culture 4
<i>Gender and Ethnicity in American Popular Culture: choose one (4 units)</i>	
AMST 357	Latino Social Movements 4
AMST 365	Leadership in the Community — Internship 4
AMST 385	African American Culture and Society 4
AMST 395	African American Humor and Culture 4
AMST 448	Chicano and Latino Literature 4
AMST 449	Asian American Literature 4
ENGL 476	Images of Women in Contemporary Culture 4

Popular Culture in the Arts: choose one (4 units)

AHIS 363	Race, Gender, and Sexuality in Contemporary Art 4
AHIS 370	Modern Art III: 1940 to the Present 4
CTCS 392	History of the American Film, 1925–50 4
CTCS 393	History of the American Film, 1946–75 4
CTCS 394	History of the American Film, 1977–Present 4
ENGL 375	Science Fiction 4
ENGL 471	Literary Genres and Film 4
ENGL 481	Narrative Forms in Literature and Film 4
HIST 481	Producing Film Histories 4

MUJZ 419	The Jazz Experience: Myths and Culture 4
MUSC 400	The Broadway Musical: Reflection of American Diversity, Issues and Experiences 4
MUSC 422	The Beatles: Their Music and Their Times 4
MUSC 450	The Music of Black Americans 4
PAS 400	New Models of Art in City-Space 4

Electives (4 units)

Choose one additional upper-division course from the lists above, in a department you have not already chosen for the minor.

Minor in Jewish American Studies

Jewish American Studies is a multidisciplinary program designed to provide students with a critical understanding of the historical, cultural, social, political and religious experience of Jewish Americans, with a particular emphasis on the development and culture of Jewish communities in California and the West as well as on both historical and contemporary effects of global issues on American Jewish communities. By drawing upon courses in American Studies and by emphasizing comparative as well as interdisciplinary study, this program offers training in the analytical tools and methods of interpretation appropriate for studying the American Jewish experience in its particularity and ethnic and cultural study in general. The program is particularly appropriate for students interested in integrating studies in the humanities and social sciences and for students preparing to work and interact with diverse communities and cultures in the United States and abroad in such fields as education, human services, business, journalism and public administration.

Successful completion of 20 units in American Studies and Judaic Studies are required to qualify for the minor.

CORE REQUIREMENTS UNITS

AMST 202	Interethnic Diversity in the West 4
JS 300	American Jewish History 4

Three courses from the following:

AMST 301	America, the Frontier, and the New West 4
AMST 350	Junior Seminar in American Studies and Ethnicity: Theories and Methods 4
JS 330	Jewish Power, Powerlessness, and Politics in the Modern Era 4
JS 381	The Jew in American Society 4
JS 382	Judaism as an American Religion 4
JS 383	Jews in American Popular Culture 4
JS 415	The American Jewish Experience in Film 4
JS 428	Blacks and Jews: Conflicts and Alliances 4

Minor in Critical Approaches to Leadership

See the Department of Interdisciplinary Studies, page 375xx.

Minor in Race, Ethnicity and Politics

See the Department of Political Science, page 439xx.

Graduate Degrees

The major objective of the graduate program in American Studies and Ethnicity is to prepare future faculty with the research and teaching abilities to understand and communicate the diversity of American society and culture. This is accomplished by stressing the importance of an interdisciplinary perspective which integrates social analysis with cultural approaches. The program's most significant areas of specialization are: (1) the theoretical study of race and ethnicity, particularly as it is constructed through gender, class, sexuality and the state; (2) a regional focus on Los Angeles and the American West; and (3) an emphasis on the study of cultural production in the United States, with particular attention on the theoretical directions and methodological innovations in the interdisciplinary study of American culture.

Admission Requirements

Requirements for admission include: scores satisfactory to the program in the verbal, quantitative and analytical General Test of the Graduate Record Examinations; evidence of competence in writing English and analytical abilities; a satisfactory written statement by the applicant of aims and interests in pursuing interdisciplinary graduate work; letters of recommendation from at least three college instructors; and grades satisfactory to the department earned by the applicant at other institutions.

All applicants are required to take the GREs and submit their complete undergraduate record; at least three letters of recommendation and a statement of purpose should be sent to the director of the program. Applicants are urged to submit written materials as supportive evidence.

Degree Requirements

These degrees are under the jurisdiction of the USC Graduate School. Refer to the Graduate School section of this catalogue (page 97xx) for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School.

Master of Arts

The department does not accept applicants for a Master of Arts degree. All graduate work in American Studies and Ethnicity at USC is taken as part of a Ph.D. program, and the M.A. in American Studies and Ethnicity is intended only as a transitional degree in the process of completing requirements for the Ph.D., although in some cases students may be invited to attempt a terminal M.A.

After completing at least 30 units, taking AMST 500 and at least one research seminar, maintaining a GPA of at least 3.0, making successful academic progress and taking the qualifying exam, students will either be granted a transitional master's degree and continue

on towards the Ph.D. or be granted a terminal master's degree.

Doctor of Philosophy in American Studies and Ethnicity

Application deadline: December 1

Students may earn the Ph.D. in American Studies and Ethnicity by successfully completing the following requirements.

Total Units Required

The student's course work must total at least 64 units. No more than eight units of 794 Doctoral Dissertation and no more than four units of 790 Research may count toward the 64 units.

Course Requirements

AMST 500 Introduction to American Studies and Ethnicity is required of all doctoral students, and it is highly recommended that students complete this course in the first year of residence. Two 600-level graduate seminars are required for the degree, with at least one of these being an interdisciplinary seminar offered by American Studies and Ethnicity. The second 600-level course must be approved by the director of graduate studies.

Foreign Language Requirement

Ph.D. students are required to demonstrate proficiency in one foreign language. This requirement must be met before a student is eligible to take the qualifying examination. Competency may be demonstrated by completing a course in the literature of that language at the 400 or 500 level (with a grade of B [3.0] or better), or by passing a foreign language exam that tests proficiency in reading comprehension and translation.

Methods Requirement

Students are required to show competency in two theoretical methodologies from a list approved by the American Studies and Ethnicity department. In most cases, competency is established by successfully completing one course concentrating in a specific method offered by a department or school, although more advanced courses in that method may be suggested by a qualifying exam committee. The following methodologies fulfill the methods requirement: literary/textual analysis; historical/archival analysis; ethnography; cultural/visual analysis; spatial practices and analysis; and, quantitative analysis.

Disciplinary Requirement

The department of American Studies and Ethnicity believes that the strongest interdisciplinary research is conducted alongside a strong background in at least one disciplinary field by successfully completing at least four graduate courses in one discipline. These four courses must include at least one methodology course, one 600-level or above advanced seminar and two graduate reading courses at the 500- or 600-level. Each of these courses can also fulfill other requirements in the Ph.D. program, particularly the methods requirement and the course requirements listed above.

Screening Procedures

The performance of every first-year doctoral student is formally assessed by the director of the program and the student's assigned adviser at the end of the spring semester and before a student has completed 24 units toward the degree. Unsatisfactory progress toward the degree requires either remedy of the deficiencies or termination of the student's graduate program. After successfully passing the assessment procedures, each student will be encouraged to establish a qualifying exam committee.

At the end of the second year, student progress will be evaluated and each student will formally establish the members of his or her interdisciplinary examination committee from faculty he or she has worked with during the first two years. A meeting of the director of the program, qualifying exam committee members and potential members of this examination committee will take place directly after the second year to identify remaining deficiencies in a student's training and identify solutions before the qualifying examination process begins.

Qualifying Examination

Following completion of course work, the student must sit for a qualifying examination at a time mutually agreed upon by the student and the qualifying exam committee. Students seeking the Ph.D. will select four fields for examination. Every student must be examined by faculty from at least two different disciplines, as well as having one outside member on his or her examination committee.

This five-person examination committee will direct the student toward his or her qualifying examination, which will consist of both written and oral parts, in the third year. Examinations are graded honors, pass, low-pass or fail. The qualifying examination has two phases: written examinations in each field followed by a single oral examination on all four fields. Students with one fail, a low-pass in their dissertation field or more than two low-pass grades will not be permitted to enter the oral phase of the examination process. The qualifying exam committee determines whether the candidate may re-take any exam graded low-pass or fail.

Dissertation

After the qualifying examination has been passed, an interdisciplinary dissertation committee of at least three faculty members from the examination committee must approve a dissertation prospectus before full-time research commences. Only at this point is a student admitted to candidacy for the Ph.D. degree and will thereafter concentrate on the dissertation. After students become candidates for the Ph.D. degree, they must register for 794 Doctoral Dissertation each semester thereafter until the dissertation is completed.

The final state of the program is the submission of a dissertation that makes an original and substantial contribution to its field of study. The final copy of the dissertation must conform to the regulations of the Graduate School.

Advisement

Upon entering the program, each student will be assigned an academic adviser from among the faculty closest to the student's own academic interests. Students should seek advice on their program of studies

from this academic adviser, the director of the program and the director of graduate and professional studies.

Once a student formally establishes an interdisciplinary examination committee, the chair of this committee becomes the student's main academic adviser, along with other members of this qualifying exam committee. The committee must be in place and approved by the Graduate School at the time the student schedules a qualifying examination.

The dissertation committee becomes the student's main advising unit after the qualifying examination, with the chair having the principal responsibility of advisement. At all stages of the student's progress through the program, the director of the program and the director of graduate and professional studies will be available for advisement and counsel as well.

Transfer of Credit

A transfer of credit statement is prepared by the Degree Progress Department for students admitted to full graduate standing. The application of any available transfer credit is contingent on successful completion of the screening exam and is determined by the director of the program no later than the end of the second year according to the following guidelines: credit will only be allowed for courses (1) from accredited graduate schools; (2) of grade B (3.0 on a four-point scale); (3) constituting a fair and reasonable equivalent to current USC course work at the graduate level and fitting into the program for the degree; and (4) approved by the Graduate School. Graduate transfer credit will not be granted for life experience, credit by examination, non-credit extension courses, correspondence courses, thesis course supervision or creative writing courses.

The maximum number of transfer credits which may be applied toward the M.A. degree is four units, and a maximum of 24 units of transfer credits may be applied toward the Ph.D. degree. The Graduate School stipulates that transfer units must have been completed within 10 years of admission for the doctoral program to be applied toward the degree.

Courses of Instruction

AMERICAN STUDIES AND ETHNICITY (AMST)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

AMST 101gm Race and Class in Los Angeles (4, Fa)

Analysis of race and the economic, political, gender, and social dimensions of contemporary Los Angeles including topics such as residential segregation, economic inequality, and city politics. *Concurrent enrollment:* WRIT 140.

AMST 133g Religions of Latin America (4) (Enroll in REL 133g)

AMST 135gm Peoples and Cultures of the Americas (4, FaSp) An introduction to cultures and people in the Americas; the social, historical, economic and cultural formations that together make up the Latino/a American imaginary.

AMST 140 Borderlands in a Global Context (4) Interdisciplinary survey of theory and borderland site cases, national sentiment, linguistic and cultural conflicts, exploration of local, regional, and national identities in cultural contact zones.

AMST 200m Introduction to American Studies and Ethnicity (4, FaSp) Introduction to American studies and ethnic studies. Provides an overview of major theories, concepts, and issues.

AMST 202m Interethnic Diversity in the West (4) Introduction to community, culture, and ethnicity within the Western United States with emphasis on African American, Asian American, and Chicano/Latino cultures and social patterns.

AMST 206m The Politics and Culture of the 1960s (4, Sp) Examines political and cultural change in the United States during the decade of the 1960s.

AMST 220m The Making of Asian America (4, FaSp) Historical, social, and cultural analysis of (East, South, and Southeast) Asians in the United States. Themes examined: immigration, race and gender relations, ethnic culture, community and identity.

AMST 240gm Collective Identity and Political Violence: Representing 9/11 (4, FaSp) (Enroll in ANTH 240gm)

AMST 242gm Social Responses to Disaster (4) Exploration of social complexities associated with U.S. disasters; influences of (political) action on mitigation, response, recovery; how activities and investment vary along racial and economic lines.

AMST 250gm The African Diaspora (4, FaSp) History, political-economy and aesthetics of the African Diaspora with emphasis on Latin America, the Caribbean, Europe and Africa.

AMST 252gm Black Social Movements in the U.S. (4) This course examines black social movements for freedom, justice, equality, and self-determination. Beginning with Reconstruction, movements include labor, civil rights, radical feminism, socialism, reparations, Black Nationalism, prisoners' rights, and Hip Hop.

AMST 274gm Exploring Ethnicity Through Film (4, FaSpSm) Examination of the constructions of American ethnicity/race in film. (Duplicates credit in former AMST 374m).

AMST 285m African American Popular Culture (4, Sp) Examines history of popular cultural forms such as literature, music, dance, theatre, and visual arts produced by and about African Americans. *Concurrent enrollment:* MDA 140.

AMST 301g America, the Frontier, and the New West (4, FaSp) Introduction to the interdisciplinary study of American political, cultural, and social life with a particular emphasis on the Western United States as a region. *Recommended preparation:* HIST 100, ENGL 263.

AMST 320 Social Construction of Race and Citizenship (4, FaSp) Comparative perspective on the social construction of race and citizenship. Social, economic and political experiences of selected groups in the U.S. are examined.

AMST 328 Asian American Politics (4, FaSp) (Enroll in POSC 328)

AMST 330m Black Music and the Political Imagination (4) Explores the changing political meanings of "Black music" throughout the 20th century, from freedom to a threat to civil order, from racial integration to Black liberation. (Duplicates credit in the former GEOG 350m.)

AMST 332m Post-Civil Rights Black America (4) Analyzes the political, economic, and cultural experiences of the post-1965 period through an interrogation of contemporary conditions, movements, and responses to power in Black America.

AMST 333 Religion in the Borderlands (4) (Enroll in REL 333)

AMST 336 Re-Viewing Religion in Asian America (4) (Enroll in REL 336)

AMST 337m Islam in Black America: From Slavery to Hip Hop (4) Exploration of the rise of Islam in Black America, and the relationship of Black American Muslims to more recent Muslim immigrants using historical and sociopolitical frameworks.

AMST 340m Latina/o LA (4) Examination of spatial and social patterns of the Latino population in Los Angeles. Emphasis on economic, demographic and cultural processes. (Duplicates credit in the former GEOG 340.)

AMST 342m Law and Identities (4) Examines the complex and contested interaction between the law and racial, gender, religious, ethnic, and sexual identities using historical and contemporary cases.

AMST 344m Islamic Law and American Society (4) Examination of the nature and substance of Islamic law (Shari'a) and how it relates to American democracy, society and secularism.

AMST 348m Race and Environmentalism (4) Relationships between environmentalism, environmental problems and racial-ethnic minorities. Rise of environmental justice movement. Assessment of social science methods used to investigate these relationships.

AMST 350 Junior Seminar in American Studies and Ethnicity: Theories and Methods (4, FaSp) Advanced study in interdisciplinary theories and methods for analyzing race and ethnicity in the United States, including a comparative study of topics such as inequality, gender, and class.

AMST 353m Race and Racism in the Americas (4, FaSp) Examination of selected topics in the historical development of racism with the goal of understanding the complex ways in which race has functioned in the modern world.

AMST 357m Latino Social Movements (4, FaSp) Focuses on the political experience of Latinos in the U.S. Comparative analysis of their political experiences and perspectives, their histories of identity formation, and their political organizations.

AMST 364m African American Art (4, FaSp) (Enroll in AHIS 365m)

AMST 365 Leadership in the Community — Internship (4, FaSp) Eight to 10 hours per week in a community-based internship plus two hour lecture. Theoretical and practical issues associated with community leadership.

AMST 366m Chicana and Latina Sociology (4) (Enroll in SOCI 366m)

AMST 373m History of the Mexican American (4, FaSp) Racial and cultural background of Mexico; immigration and conquest; the Mexican in California and the southwest; the rise of contemporary Mexican-American consciousness. (Duplicates credit in former HIST 472).

AMST 375m Asian Americans: Ethnic Identity (4, FaSp) (Enroll in SOCI 375m)

AMST 376m Contemporary Issues in Asian American Communities (4, FaSp) (Enroll in SOCI 376m)

AMST 377m Legacies of Viet Nam (4, Fa) Examination of 20th century Viet Nam, the country, and "Vietnam," the American war, through the literature, film, and visual culture that have been produced by Americans, Vietnamese, and overseas Vietnamese.

AMST 378m Introduction to Asian American History (4, FaSp) Comparative examination of the social, economic, and political experiences of Asian immigrants and their descendants in the U.S., 1840s–present. (Duplicates credit in former HIST 378.)

AMST 379 Arabs in America (4, FaSp) Arab immigration and acculturation in the U.S. from late 19th century to present; emphasis on community formation, race, religion and gender.

AMST 380 American Popular Culture (4, FaSp) (Enroll in HIST 380)

AMST 382 America and the World: Japan Case Study (4, Sm) Transnational, global perspective on American culture to examine the relationship between Los Angeles and various cities in Japan. Trip to Japan.

AMST 383 Jews in American Popular Culture (4, FaSp) (Enroll in JS 383)

AMST 385 African American Culture and Society (4, Sp) Examines social and cultural issues affecting the past and present lives of African Americans in the United States.

AMST 389m Carceral Geographies (4, FaSp) Focusing on California, interdisciplinary research teams will study why there are so many new U.S. prisons. What is their relationship to shopping malls, gated communities, globalization? *Prerequisite:* AMST 200.

AMST 390 Special Problems (1–4) Supervised, individual studies. No more than one registration; by petition only.

AMST 392 Undergraduate Research Methods (2, FaSpSm) Examines processes of scholarly research; quantitative and qualitative research methods; faculty mentorship; experiential learning; research proposal writing; careers in research. Sophomore or junior standing in the major. Departmental approval.

AMST 395m African American Humor and Culture (4, FaSp) Examination of one of several traditions of African American humor for insights into shifting notions of race, culture, language and identity in and beyond Black America.

AMST 420 Sociology of Violence (4, FaSp) (Enroll in SOCI 420)

AMST 424m Political Participation and American Diversity (4, Fa) (Enroll in POSC 424m)

AMST 428 Latino Politics (4, Fa) (Enroll in POSC 428)

AMST 432m Racial and Ethnic Relations in a Global Society (4, Fa) (Enroll in SOCI 432m)

AMST 442 American Literature, 1920 to the Present (4, FaSp) (Enroll in ENGL 442)

AMST 444m Native American Literature (4, FaSp) (Enroll in ENGL 444m)

AMST 445 African American Anthropology (4, FaSp) (Enroll in ANTH 445)

AMST 446 Cultural Circuits in the Americas (4, FaSp) How does culture move within and across the Americas? What are the relationships between new global media conglomerates, "national cultural industries," and local cultural practices?

AMST 448m Chicano and Latino Literature (4, FaSp) Development of poetry, essay, short story and novel of the Chicano and Latino peoples of the United States, with particular emphasis on the differentiating characteristics between the multiple cultures that constitute the Latino populations. (Duplicates credit in former ENGL 448m.)

AMST 449m Asian American Literature (4, FaSp) Survey of Asian American literature from the earliest time to the present; development of prose, poetry and novel.

AMST 452m Race, Gender and Sexuality (4) Examination of sexual discourses in the United States in the context of slavery, empire, sex work, labor markets, schools and prisons.

AMST 456m People of Color and the News Media (4) (Enroll in JOUR 466m)

AMST 458m Race and Ethnicity in Entertainment and the Arts (4, FaSp) (Enroll in COMM 458m)

AMST 464m Latino News Media in the United States (4, Sp) (Enroll in JOUR 465m)

AMST 465 Studies in American Art (4, max 8, FaSp) (Enroll in AHIS 465)

AMST 466m The Psychology of African Americans (4, FaSp) Provides an introduction to the study of health, mental health, and social behavior among African Americans.

AMST 475m Blackness in American Visual Culture (4, FaSp) (Enroll in AHIS 475m)

AMST 483 Religion and Popular Culture in the United States (4, Sp) (Enroll in REL 483)

AMST 490x Directed Research (1–8, max 12) Individual research and readings. Not available for graduate credit.

AMST 492 Research Methods in American Studies and Ethnicity (4, Fa) Develop the research proposal and methods for completing a senior honors thesis; for students in one of the four PASE majors.

AMST 493 Senior Honors Thesis in American Studies and Ethnicity (4, Sp) Writing the honors thesis; for students in one of the four PASE majors and PASE Honors Program.

AMST 498 Senior Seminar in American Studies and Ethnicity (4, FaSp) Capstone course for majors, highlighting interdisciplinary study of race and ethnicity in a comparative context. *Prerequisite:* AMST 200.

AMST 499 Special Topics (2–4, max 8) Special topics in the earth sciences. Field trip required when appropriate to the topic. Departmental approval required.

AMST 500 Introduction to American Studies and Ethnicity (4, Fa) An exploration of themes, theoretical influences, and methodological approaches current in American Studies and Ethnic Studies. Open to first year graduate students in American Studies and Ethnicity only.

AMST 509 Key Topics in Linguistic Anthropology (4, FaSp) (Enroll in ANTH 509)

AMST 510 Readings in Chicano/Latino Studies (4, FaSp) Perspectives from the major debates that have driven the development of the field of Chicano/Latino/a studies across the disciplines.

AMST 519 Indigenous, Decolonial and Transhemispheric American Studies (4, FaSp) Evaluate pressing social science and humanities concerns hemispherically in relation to first peoples, decolonialization, land, cultural memory, and politics within comparative ethnic studies.

AMST 520 Readings in Asian American Studies (4, FaSp) Graduate seminar covering critical themes in the interdisciplinary field of Asian American Studies, including perspectives from anthropology, literature, sociology, history, political science, religious studies, cultural studies, women/gender studies and psychology.

AMST 522 Transpacific History (4) (Enroll in HIST 560)

AMST 525 Seminar in American Art (4, FaSp) (Enroll in AHIS 525)

AMST 530 Readings in African American Studies (4, max 8, FaSp) Seminar exploring crucial theoretical, methodological and historical issues in the development of African American Studies.

AMST 543 Critical Studies in Whiteness (4, max 8, FaSp) Examines meaning of "whiteness" from historical and other disciplinary perspectives; focus is on how whiteness operates within specific racial regimes to perpetuate inequality.

AMST 552 Archives and Subcultures (4, FaSp) Introduction to the practice of archival research with an emphasis on the literary and historical methods of documenting subcultural groups, particularly racial and sexual minorities.

AMST 554 Readings in Chicano/Latino History (4, FaSp) Readings, analyses, and discussion of various approaches, topics, and genres in the field of Chicano/Latino history.

AMST 560 Readings on Race and Ethnicity (4, FaSp) Exploration of research on race and ethnicity in the United States as it pertains to political, social, economic, cultural and historical issues.

AMST 562 The Practice of Ethnography (4) (Enroll in ANTH 562)

AMST 570 Readings on Los Angeles and Urban Culture (4, FaSp) Exploration of some of the leading scholarship from a variety of disciplines writing about Los Angeles and the Southern California area. Particular emphasis is placed on the intersections of historical, contemporary and cultural issues that inform recent scholarship on Los Angeles.

AMST 572 Quantitative Methods for a Diverse Society (4, FaSp) Diversity and empirical social research; conceptualization, design and measurement; conducting, analyzing and evaluating surveys and experiments; focus on obstacles in the empirical study of diversity.

AMST 580 Readings in Cultural Studies (4, FaSp) Seminar in theoretical approaches to cultural studies, with an emphasis on the analysis of race, gender, sexuality, and class in the U.S.

AMST 585 Topics in Cultural Theory (4, max 8, FaSp) Introduction to key texts on poststructuralism and its theorizing of the body, power, and historical trauma.

AMST 586 Utopia and Dystopia (4, FaSp) How did Marx conceptualize modernity? What is capital? Historical materialism? Dialectical materialism? What roles do race, class, gender, sexuality, territory and the state perform?

AMST 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the program.

AMST 593 Practicum in Teaching the Liberal Arts (2, FaSp) (Enroll in MDA 593)

AMST 599 Special Topics (2-4, max 8) Seminar in selected topics in American studies and ethnicity.

AMST 610 Interdisciplinary Research Seminar in Chicano/Latino Studies (4, max 8, FaSp) Exploration of issues involved in conducting research in the interdisciplinary field of Chicano/Latino Studies and guides students through the design and completion of a journal-quality research paper. *Recommended preparation:* graduate reading course in Chicano/Latino Studies.

AMST 622 Research Seminar on Transpacific Studies (4, FaSp) Interdisciplinary research seminar foregrounding a multilateral approach towards understanding the political, cultural, economic, and military relations and conflicts between Asia, the Americas, and the Pacific.

AMST 630 Interdisciplinary Research Seminar: African American Studies (4, FaSp) Methodological and theoretical approaches to conducting research in African American Studies; design and completion of a publishable research paper.

AMST 660 Interdisciplinary Research Seminar in Race and Ethnicity (4) Explores issues of conducting interdisciplinary research in race and ethnicity and guides students through the design and completion of a journal-quality research paper. *Recommended preparation:* graduate reading course in race and ethnicity.

AMST 662 Research Seminar in Comparative Ethnic Studies (4) Examination of the historical evolution and current status of comparative and relational ethnic studies. Original research project required.

AMST 670 Interdisciplinary Research Seminar on Los Angeles (4) Introduces students to issues of urban-based research concerning Los Angeles and guides students through the design and completion of a journal-quality research paper. *Recommended preparation:* graduate reading course on Los Angeles.

AMST 680 Interdisciplinary Research Seminar in Cultural Studies (4) Explores theoretical approaches to cultural studies as an interdisciplinary field and guides students through the design and completion of a journal-quality research paper. *Recommended preparation:* graduate reading course in cultural studies.

AMST 700 Theories and Practices of Professional Development (4, FaSpSm) Offers students a structured environment in which to write their dissertation proposals and focuses on professional development. Completion of qualifying exam. Graded CR/NC.

AMST 701 Contemporary Theories of American Studies and Ethnicity (4, max 8, Sp) Seminar in representative theoretical works in the fields of American Studies and Ethnic Studies published in the past fifteen years.

AMST 790 Research (1-12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the program. Graded CR/NC.

AMST 794abcdz Doctoral Dissertation (2, 2, 2, 2, 0) Credit on acceptance of dissertation. Graded IP/CR/NC.

Anthropology

Grace Ford Salvatori 120
(213) 740-1900
FAX: (213) 747-8571
Email: anthro@dornsife.usc.edu
Chair: Gary Seaman, Ph.D.

Faculty

Professors: Eugene Cooper, Ph.D.; Caleb E. Finch, Ph.D. (*Gerontology*); Gelya Frank, Ph.D. (*Occupational Science*); Janet Hoskins, Ph.D.; Dorinne Kondo, Ph.D.; Nancy Lutkehaus, Ph.D.; Peter Mancall, Ph.D. (*History*); Cheryl Mattingly, Ph.D.; Lawrence A. Palinkas, Ph.D. (*Social Work*); Alison Renteln, Ph.D. (*Political Science*);

Andrei Simic, Ph.D.; Craig Stanford, Ph.D.* (*Biological Sciences*)

Associate Professors: Lanita Jacobs, Ph.D.; Andrew Lakoff, Ph.D. (*Sociology*); Gary Seaman, Ph.D.

Distinguished Adjunct Professor: Jane Goodall, Ph.D.

Adjunct Professor: Andre Singer, Ph.D.

Associate Professors (Teaching): Erin Moore, Ph.D.; Tok Thompson, Ph.D.; Thomas Ward, Ph.D.

Lecturer: Thomas Garrison, Ph.D.

*Recipient of university-wide or college teaching award.

The Department of Anthropology offers a B.A. in Anthropology with tracks in cultural anthropology, medical anthropology and biological anthropology; a B.A. in Anthropology with a concentration in visual anthropology; a B.A. in Interdisciplinary Archaeology; a B.A. in Global Studies; minor programs in cultural anthropology, medical anthropology, folklore and popular culture; an M.A. in Anthropology; a certificate in visual anthropology; a progressive master's degree in visual anthropology; and a Ph.D. in Anthropology.

The Department of Anthropology encourages students to become involved in ethnographic research and fieldwork while gaining a firm theoretical foundation in anthropology. Special areas of emphasis in the department are provided by programs in visual anthropology and primate ethology at both the undergraduate and graduate levels. Undergraduates may take a number of courses in visual anthropology that focus on the analysis and understanding of human behavior and are encouraged to include visual media in their senior field methods practicum. Undergraduates may also elect to complete a major with an emphasis in visual anthropology or a major in urban applied anthropology.

Bachelor of Arts

Anthropology Major Requirements

The B.A., Anthropology has three tracks: cultural anthropology, medical anthropology and biological anthropology. Each track has five core courses and five additional required courses depending on the track. The total number of units for each program is 40.

In addition to the general education requirements, the following courses are required.

Cultural Anthropology Track Requirements

REQUIRED COURSES, LOWER-DIVISION		UNITS
ANTH 200L	The Origins of Humanity	4
ANTH 201	Introduction to Social Anthropology, or	
ANTH 263	Exploring Culture Through Film	4
REQUIRED COURSES, UPPER-DIVISION		UNITS
ANTH 410ab	Ethnographic Field Methods and Practicum	4-4
ANTH 440	History of Anthropological Theory	4

Five additional courses are required, of which at least two must be topical and at least one must represent an area of world ethnography. The following Anthropology courses are considered topical: ANTH 300, ANTH 305, ANTH 306, ANTH 317, ANTH 333, ANTH 335, ANTH 345, ANTH 355, ANTH 360, ANTH 365, ANTH 370, ANTH 371, ANTH 372, ANTH 373, ANTH 375, ANTH 405, ANTH 407,

ANTH 455, ANTH 460, ANTH 470, ANTH 472, ANTH 476; the following courses are cross-listed with Anthropology and are also considered topical: AMST 395, SWMS 336, SWMS 385 and SWMS 420.

The following Anthropology courses are considered to represent an area of world ethnography: ANTH 310, ANTH 311, ANTH 314, ANTH 315, ANTH 316, ANTH 320, ANTH 322, ANTH 323, ANTH 324, ANTH 326, ANTH 327, ANTH 328, ANTH 330, ANTH 335, ANTH 374, ANTH 425, ANTH 435x; the following course is cross-listed with Anthropology and is also considered to represent an area of world ethnography: SOCI 375.

Medical Anthropology Track Requirements

REQUIRED COURSES, LOWER-DIVISION		UNITS
ANTH 200L	The Origins of Humanity	4
ANTH 201	Introduction to Social Anthropology, or	
ANTH 263	Exploring Culture Through Film	4

REQUIRED COURSES, UPPER-DIVISION		UNITS
ANTH 410ab	Ethnographic Field Methods and Practicum	4-4
ANTH 440	History of Anthropological Theory	4

Five additional Anthropology courses are required, which should include at least three courses from the following list, one of which may be lower-division: ANTH 101, ANTH 105, ANTH 305, ANTH 360, ANTH 365, ANTH 370, ANTH 373, ANTH 380, ANTH 405.

Biological Anthropology Track Requirements

REQUIRED COURSES, LOWER-DIVISION		UNITS
ANTH 200L	The Origins of Humanity	4
ANTH 201	Introduction to Social Anthropology, or	
ANTH 263	Exploring Culture Through Film	4

REQUIRED COURSES, UPPER-DIVISION		UNITS
ANTH 406	Seminar in Biological Anthropology	4
ANTH 440	History of Anthropological Theory	4
ANTH 490x	Directed Research, or	
ANTH 491	Directed Research for Honors	4

Five additional upper-division Anthropology courses are required, which should include at least three from the following: ANTH 300, ANTH 305, ANTH 306, ANTH 308 and ANTH 375.

Major in Anthropology (Visual Anthropology) Requirements

In addition to the general education requirements, the following courses are required.

REQUIRED COURSES, LOWER-DIVISION		UNITS
ANTH 200L	The Origins of Humanity	4
ANTH 263	Exploring Culture Through Film	4

REQUIRED COURSES, UPPER-DIVISION		UNITS
ANTH 410ab	Ethnographic Field Methods and Practicum	4-4
ANTH 440	History of Anthropological Theory	4
ANTH 475	Ethnographic Film Analysis	4
ANTH 476	Ethnographic Film Theory from an Historical Perspective	4

ONE COURSE TO BE SELECTED FROM:		UNITS
ANTH 470	Multidisciplinary Seminar in Visual Anthropology	4
ANTH 472	Visual Techniques in Anthropology: Stills	4

TWO COURSES TO BE SELECTED FROM:		UNITS
Two 300- or 400-level anthropology courses not listed among the required courses		8
Total upper-division units		32

Bachelor of Arts in Global Studies

The Department of Anthropology offers a course of study that leads to a B.A. degree in Global Studies. As with any degree in the USC Dornsife College of Letters, Arts and Sciences, students are required to complete all applicable general education, writing, diversity and language requirements. Specific degree requirements include 16 units of required core courses within anthropology (4 lower level, 12 upper level), 16 units of required humanities or social science electives, and 8 units of language courses (in addition to the 8 units required of all USC Dornsife students), for a total of 40 units.

The 16 units of required courses in the humanities and/or social sciences must be taken in the Departments of Anthropology, Comparative Literature, History, International Relations, Political Science and Religion. Students must choose these units from a list of electives (see below). Some substitutions can be made with the approval of the thesis adviser. The choice of these courses allows students to tailor the degree to their individual needs, but students are expected to take their elective courses with a focus on one geographical area or set of issues. The 8 additional units of language may be taken at USC or fulfilled elsewhere in compliance with the same guidelines that apply to the USC Dornsife foreign language requirement.

In addition to specific course work, students in the global studies major should complete at least one and are recommended to complete two study abroad programs with at least one semester abroad during the junior year. Ideally, a student would spend one summer abroad and one semester abroad prior to the senior year.

In the senior year, global studies majors take a senior seminar in the fall semester and write a senior thesis under the supervision of a regional scholar in the spring semester. A regional scholar can be chosen from any of the six participating departments — Anthropology, Comparative Literature, History, International Relations, Political Science and Religion — and this scholar should have some expertise in the country or region where the student has spent a semester abroad. Students will receive guidance in the selection of a regional scholar to supervise their senior thesis.

International Careers

Global studies is an ideal course of study for students wishing to work for international organizations, either governmental organizations or non-governmental ones (NGOs). Along with the required core and collateral courses, the elective units allow sufficient flexibility to complete course prerequisites for regional and area studies programs, law school and business school. The global studies academic adviser can provide direction in planning course selections toward specific fields.

REQUIRED CORE COURSE, LOWER-DIVISION (4 UNITS)

ANTH 205	Introduction to Global Studies and Overseas Research	4
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REQUIRED CORE COURSES, UPPER-DIVISION (12 UNITS)

ANTH 325	Global Studies Research Methods	4
ANTH 415	Global Studies Senior Seminar	4
ANTH 490X	Directed Research, or	
ANTH 491	Directed Research for Honors	4

APPROVED ELECTIVE COURSES (16 UNITS)

Humanities Elective Courses: AMST 250, COLT 102, COLT 250, COLT 264, COLT 303, COLT 379, COLT 382, COLT 445, FREN 347, HIST 180, HIST 300, HIST 324, HIST 333, HIST 369, HIST 372, HIST 384, HIST 413, HIST 456, HIST 470, IR 376, REL 315, REL 316, REL 330, REL 331, REL 332, REL 334, REL 415, REL 417

Social Science Elective Courses: ANTH 235, ANTH 250, ANTH 273, ANTH 301, ANTH 314, ANTH 327, ANTH 328, ANTH 330, ANTH 333, ANTH 335, ANTH 345, ANTH 373, ANTH 410ab, ANTH 425, ANTH 460, IR 210, IR 305, IR 308, IR 309, IR 310, IR 323, IR 358, IR 361, IR 362, IR 364, IR 367, IR 371, IR 439, IR 463, POSC 120, POSC 248, POSC 250, POSC 255, POSC 260, POSC 351, POSC 352, POSC 355, POSC 358, POSC 363, POSC 365, POSC 366, POSC 377, POSC 453, SWMS 336

Minor in Cultural Anthropology

REQUIRED COURSES, LOWER-DIVISION UNITS

ANTH 201	Introduction to Social Anthropology, or	
ANTH 263	Exploring Culture Through Film	4

REQUIRED COURSE, UPPER-DIVISION UNITS

ANTH 440	History of Anthropological Theory	4
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TWO COURSES TO BE SELECTED FROM: UNITS

ANTH 345	Politics, Social Organization, and Law	4
ANTH 360	Symbolic Anthropology	4
ANTH 370	Family and Kinship in Cross-Cultural Perspective	4
ANTH 460	Economic Anthropology	4
One world area specialization course		4

Minor in Folklore and Popular Culture

The minor in folklore and popular culture provides an academic foundation for students interested in the many genres in the field including folktales, myths, legends, proverbs, jokes, games, folk medicine, and

folk and indigenous musical traditions, from around the world. Through interdisciplinary course work, students will learn techniques of collecting, analyzing and interpreting the traditional expressive culture of diverse groups. Students will analyze the interrelationships of folklore and national, regional and ethnic identities. After becoming acquainted with methods of interpreting different forms of folklore, students will see how value systems are reflected in the data, so that students understand the ideological underpinnings of group formation, group identity, conflict and strategies for resolution. By focusing on the individual, informal culture, and the tension between the individual and myriad groups to which they belong, folklore provides yet another window into understanding how individuals function in complex societies. Since the field is historically grounded and culturally comparative, folklore provides important perspectives on the human condition.

Course Requirements

For the minor in folklore and popular culture, students must complete five courses, as distributed below.

CORE REQUIREMENT UNITS

ANTH 333	Forms of Folklore	4
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LOWER-DIVISION COURSES (CHOOSE ONE) UNITS

AMST 285	African American Popular Culture	4
ANTH 101	Body, Mind and Healing	4
ANTH 263	Exploring Culture Through Film	4
ANTH 273	Shamans, Spirits and Ancestors: Non-Western Religious Traditions	4
CLAS 280	Classical Mythology	4
COMM 206	Communication and Culture	4
HIST 271	Early Native American Stories	4

UPPER-DIVISION COURSES (CHOOSE THREE) UNITS

AMST 395	African American Humor and Culture	4
ANTH 360	Symbolic Anthropology	4
ANTH 370	Family and Kinship in Cross-Cultural Perspective	4
ANTH 372	Interpretation of Myth and Narrative	4
ANTH 373	Magic, Witchcraft and Healing	4
ANTH 490X	Directed Research	4
CLAS 325	Ancient Epic	4
CLAS 380	Approaches to Myth	4
COLT 311	Epic	4
COLT 312	Heroes, Myths and Legends in Literature and the Arts	4
COLT 365	Literature and Popular Culture	4
COMM 384	Interpreting Popular Culture	4
COMM 440	Music as Communication	4
GERM 346	German Folklore and Popular Culture	4
HIST 380	American Popular Culture	4
MDA 330	The Armenian Heritage: History, Arts, and Culture	4
MUSC 444	American Roots Music: History and Culture	4
POSC 441	Cultural Diversity and the Law	4

Minor in Medical Anthropology

Medical anthropology examines the body, illness and healing from a cultural perspective, including comparative studies of folk healing systems, curing rituals and Western biomedical practices.

REQUIRED COURSE UNITS

ANTH 101	Body, Mind and Healing	4
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ONE COURSE (4 UNITS) TO BE SELECTED FROM: UNITS

ANTH 105	Culture, Medicine and Politics	4
ANTH 125	Social Issues in Human Sexuality and Reproduction	4
ANTH 200L	The Origins of Humanity	4
ANTH 201	Introduction to Social Anthropology	4
ANTH 273	Shamans, Spirits and Ancestors: Non-Western Religious Traditions	4

UPPER-DIVISION COURSES: FOUR OF THE FOLLOWING (16 UNITS): UNITS

ANTH 305	Childhood, Birth and Reproduction	4
ANTH 360	Symbolic Anthropology	4
ANTH 373	Magic, Witchcraft and Healing	4
ANTH 375	Applied Anthropology	4
ANTH 380	Sex and Gender in Anthropological Perspective	4
ANTH 405	Evolutionary Medicine	4
ANTH 440	History of Anthropological Theory	4
OT 375	The Narrative Structure of Social Action: Narrative, Healing and Occupation	4
SWMS 336	Health, Gender and Ethnicity	4
SWMS 420	Woman, Nature, Culture: The Behavioral Ecology of Women	4

Minor in Southeast Asia and its People

This minor allows students to supplement more narrowly defined departmental majors with a multidisciplinary focus on an area of great importance both to global developments and to cultural heritage issues in California and the United States. There is no language requirement and no required courses, but students must take one lower and four upper-division courses dealing with Southeast Asian cultures and people of Southeast Asian heritage in the United States. The focus of this new minor is on transnational connections and the new area of global culture.

LOWER DIVISION UNITS

Choose one class (4 units)		
ANTH 250	Race and Sexual Politics in Southeast Asia	4
ANTH 273	Shamans, Spirits and Ancestors: Non-Western Religious Traditions	4
AMST 220	The Making of Asian America	4
POSC 120	Comparative Politics	4
REL 131	Religions of Asia	4
REL 150	Religion and Immigration	4
HIST 265	Understanding Race and Sex Historically	4

UPPER DIVISION UNITS

Choose four classes (16 units), including at least one class from each list.

Southeast Asia

ANTH 322	Anthropology of Bali	4
ANTH 373	Magic, Witchcraft, and Healing	4
COLT 379	Nationalism and Postcolonialism in Southeast Asian Cinema	4
IR 315	Ethnicity and Nationalism in World Politics	4
POSC 352	Politics of Southeast Asia	4
POSC 377	Asian Political Thought	4
REL 330	Introduction to the Religions of India	4
REL 334	Religion and Colonial Encounter	4

Southeast Asia and the United States

AMST 377	Legacies of Viet Nam	4
HIST 344	The Vietnam War, 1945–1975	4
IR 424	Citizenship and Migration in International Politics	4
POSC 328	Asian American Politics	4
REL 336	Re-viewing Religion in Asian America	4

Note: Courses have no prerequisites.

Interdisciplinary Law and Society Minor

See the Department of Political Science, page 439xx.

Minor in Photography and Social Change

See Sociology, page 471xx.

Master of Arts in Anthropology

Degree Requirements

Students are not accepted for the M.A. in Anthropology alone, but the M.A. in Anthropology can be granted after two years of course work and satisfactory completion of the screening exams.

REQUIRED COURSES	UNITS
ANTH 501 History and Foundations of Anthropology	4
ANTH 502 Contemporary Theory in Anthropology	4
ANTH 503 Regional Ethnography, or	
ANTH 506 Primate Behavior and Sociobiology	4
ANTH 562 The Practice of Ethnography (or another methods course approved by the supervisor for primatologists)	4
Four 4-unit graduate-level courses in anthropology	16
	32

A screening examination must be taken before a student has completed more than 24 units of course work and should be submitted in the third year of residence. The exam consists of three written field statements, a working bibliography and an oral defense.

The Center for Visual Anthropology

The primary goals of the Center for Visual Anthropology (CVA) are: to promote the incorporation of visual modes of expression into the academic discipline of anthropology; to promote mutual understanding and collaboration between professionals in the visual media and in anthropology; to create an awareness of the anthropological perspective in documentaries produced for mass audiences; to improve the materials and techniques available for using film in teaching anthropology; to encourage the collection, archiving and analysis of visual documentation for anthropological research. The Ethnographics laboratory is a part of the Center for Visual Anthropology, which provides archival and computer facilities for students and faculty who work with nonlinear editing systems and interactive media in anthropology. The primary mission of the Ethnographics Lab is to promote the integration of all forms of information, whether text, graphics of time-based media, into a new synthesis of anthropological knowledge. It provides support for research and representation in multimedia formats carried out in a new laboratory facility based on computer AV technologies and software.

The Jane Goodall Research Center is the designated repository of field data from Jane Goodall's work among the primates of Gombe National Park in Tanzania. A computer interactive multimedia archive of these materials is being implemented to make them available to students, faculty and other interested scholars.

Facilities

The CVA housed at the Social Science Building on the USC campus and at the C-Lab, is equipped with broadcast-quality production and editing facilities in video.

These include Super 8 systems and highband 3/4" as well as 1/2" videos. Editing facilities include Super 8 editors, JVC 1/2" editing systems, a Sony 3/4" time code system, an online editing system and an AVID system. Editing and viewing facilities are also located in the School of Cinematic Arts. The CVA maintains a complete still photography lab and darkroom.

Policy on Films and Videos Produced by Students

All films and videos produced with school equipment, funding or facilities are the property of USC. Any income from distribution of student-produced films and videos will be used for the benefit of CVA students through production budgets, equipment purchases or scholarships.

Certificate in Visual Anthropology

Students can be admitted to the certificate program in visual anthropology after they have completed their Ph.D. qualifying examinations. The certificate is an interdisciplinary program, with training in digital video production provided by the USC School of Cinematic Arts. Professional skills in video production are designed to help students present their research results to a wider audience and to use visual media effectively in communicating ideas about anthropology. After completing fieldwork, students take a year-long editing sequence and practicum (ANTH 576 and ANTH 577) to finish a visual project, which will complement the written dissertation.) A total of 16 units is required.

REQUIRED COURSES UNITS

ANTH 575	Seminar in Ethnographic Film	4
ANTH 576L	Anthropological Media Seminar	4
ANTH 577L	Advanced Anthropological Media Seminar	4
ANTH 562	The Practice of Ethnography	4

Students may begin to take course work required for the certificate in their first year, but they cannot complete their project until they have satisfied other requirements for doctoral candidacy. The Certificate in Visual Anthropology is received at the same time as the Ph.D.

Master of Visual Anthropology

Students can apply for the Master of Visual Anthropology only if they have a strong undergraduate background in visual anthropology and have a clearly outlined project for a documentary based on ethnographic research that can be completed within a year from the time that they are admitted.

REQUIRED COURSES UNITS

ANTH 502	Contemporary Theory in Anthropology	4
ANTH 562	The Practice of Ethnography	4
ANTH 576L	Anthropological Media Seminar	4
ANTH 575	Seminar in Ethnographic Film	4
ANTH 577L	Advanced Anthropological Media Seminar	4
MDA 501	Introduction to Visual Studies: Methods and Debates, or	
One 4-unit graduate Anthropology course		4

One elective from among the following

recommended courses (4 units):

ANTH 501, ANTH 503, ANTH 509, ANTH 510, ANTH 601, ANTH 602, ANTH 603, ANTH 604, ANTH 605, ANTH 606, or MDA 599 Special Topics

4
28

The final documentary project must be submitted in rough cut format by the end of August following the completion of all course work in May.

Doctor of Philosophy in Anthropology

Students may apply online for graduate study in the doctoral program at usc.edu/admission/graduate/apply. The Ph.D. requires 60 units of course work. These include the 32 units required for the M.A. (16 units of required courses and 16 of graduate electives), 4 additional graduate units, plus a sequence of two graduate courses in an outside field. The additional required units for the Ph.D. are ANTH 790 Research (8 units) and ANTH 794ab Doctoral Dissertation (2-2 units). Before being admitted to Ph.D. candidacy, the student must fulfill the language requirement, present an expanded version of the field statements at a qualifying examination, write a dissertation prospectus and pass the qualifying examination. Having completed this work, the student will conduct fieldwork and write the doctoral dissertation.

Degree Requirements

REQUIRED COURSES		UNITS
ANTH 501	History and Foundations of Anthropology	4
ANTH 502	Contemporary Theory in Anthropology	4
ANTH 562	The Practice of Ethnography	4
ANTH 790	Research (minimum 8 units required)	8
ANTH 794ab	Doctoral Dissertation	2-2
4 anthropology graduate electives		20

Completion of the program requires 60 units.

Foreign Language Requirement

A reading knowledge of a scholarly language (normally chosen from among Arabic, Chinese, French, German, Italian, Japanese, Portuguese, Russian or Spanish) is required before admission to candidacy. If some other field language is required for the dissertation research to be successfully completed (for example, Maya, Hebrew, Javanese, etc.), this will be communicated to the student upon submission of the field project required for admission to candidacy.

Courses of Instruction**ANTHROPOLOGY (ANTH)**

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

ANTH 100g Principles of Human Organization: Non-Western Societies (4, FaSp) Universal social organizational themes and their culture-specific variations are explored across five non-western societies.

ANTH 101 Body, Mind and Healing (4) The body, illness and healing from a cultural perspective, including comparative studies of folk healing systems, curing rituals and Western biomedical practices.

ANTH 105g Culture, Medicine and Politics (4, Fa) Survey of the impact of public institutions, the private sector, and cultural practices on health and the delivery of health care in the United States. *Concurrent enrollment:* WRIT 140.

ANTH 125g Social Issues in Human Sexuality and Reproduction (4, FaSp) Examination of the "natural" (biological) and "unnatural" (social and cultural) dimensions of human sexuality and reproduction. *Concurrent enrollment:* WRIT 140.

ANTH 140g Native Peoples of Mexico and Central America (4, Sp) An exploration of the nature and contributions of pre-Columbian high civilizations (Maya, Aztecs, etc.) and their descendants as they resist and assimilate to the modern world.

ANTH 200Lg The Origins of Humanity (4, FaSp) Foundations of the human species. Examination of scientific evidence from Darwinian theory, primate behavior, fossils, and the behavior of modern people.

ANTH 201 Introduction to Social Anthropology (4, FaSpSm) Major culture types, nomadic hunters and herders, peasant and tribal societies, sophisticated kingdoms; social, political, economic, and religious institutions.

ANTH 202 Introduction to Archaeology (4, Sp) How archaeological research is conceived, planned, and carried out, from survey and excavation to analysis of finds and final reconstruction of ancient cultural systems.

ANTH 205 Introduction to Global Studies and Overseas Research (4, Sp) Cultural differences and social processes examined in global and regional networks. Issues are studied ethnographically, using materials from several disciplines.

ANTH 225 Gender, Sex, and Science: A Gender Studies Approach (4) (Enroll in SWMS 225)

ANTH 235g The Changing Pacific: Culture, History and Politics in the New South Seas (4, Fa) Current social and political developments in the South Pacific analyzed from the perspective of the historical relationship between indigenous cultures and the West. *Concurrent enrollment:* MDA 140.

ANTH 240gm Collective Identity and Political Violence: Representing 9/11 (4, FaSp) Critically examines visual, textual, and performative representations of culture and identity, with the terrorist attacks of 9/11 serving as a topical anchor. *Recommended preparation:* ANTH 263; *concurrent enrollment:* WRIT 140.

ANTH 250g Race and Sexual Politics in Southeast Asia (4) Southeast Asia is studied as a meeting place of different races and cultural traditions, with emphasis on the precolonial heritage of sexual equality and post-colonial reinterpretations of men's and women's worlds.

ANTH 263g Exploring Culture Through Film (4, FaSpSm) Concepts of social anthropology using filmic representations of societies throughout the world in contrast to written ethnography.

ANTH 273g Shamans, Spirits and Ancestors: Non-Western Religious Traditions (4, Fa) An intensive study of local systems of belief and knowledge in selected societies in the Pacific, Asia, Africa, the Caribbean and Latin America with emphasis on ideas of the spirit world.

ANTH 300 Evolution, Ecology, and Culture (4, Sp) The roles of biology, culture, and the environment in shaping human society, integrating evolutionary biology and cultural theory.

ANTH 301 The Performance of Healing (4) Survey of the performance of healing in cross-cultural perspective. The course culminates in field research to Spiritist centers outside the United States.

ANTH 304 Prehistoric Archaeology (4) Examination of the rise of human social complexity from the first Homo Sapiens through the development of agriculture, chiefdoms, states and empires. *Recommended preparation:* ANTH 200Lg.

ANTH 305 Childhood, Birth and Reproduction (4, Fa) Cross-cultural analysis and comparison of the experience and cultural conception of birth, maternity, parenthood, and childhood in western and non-western societies.

ANTH 306 Primate Social Behavior (4) Social behavior of living nonhuman primates, with an emphasis on field studies of apes and monkeys. Topics include aggression, communication, reproduction, cognition and ecology.

ANTH 308 Origins and Evolution of Human Behavior (4) Examination of the evidence for and against evolutionary bases of a range of human behaviors. Topics include sex differences, human reproductive strategies, race, IQ, human ecology.

ANTH 310 Archaeology of the Americas (4, Irregular) Pre-Columbian culture from early hunters to the Spanish conquest in major geographical areas of Mexico, Central America, Peru, or the United States.

ANTH 311 Old World Archaeology (4, Irregular) Neolithic revolution and origins of civilization in major culture centers such as Mesopotamia, Egypt, India, or China.

ANTH 314 The Nature of Maya Civilization (4) A seminar forum on Maya culture from the earliest form to present; problems of origins, classic florescence, systems collapse, conquests, persistence, and transformation today.

ANTH 315g North American Indians (4, Fa) North American Indian societies, their major cultural themes, ethnological significance, and comparability with Western European cultural forms; lectures, visuals, and indigene demonstrations.

ANTH 316gm North American Indians in American Public Life (4, Sp) Role of American Indians in American public life from colonial times to the present; native American forms of government; relations between tribes and the U.S.

ANTH 317 Imaging Indians: From Warriors to Wind-talkers (4, Fa) An historical and anthropological overview of 500 years of the presentation of differing and, often, contradictory perceptions of Native American life and character in popular and academic media.

ANTH 320 Male and Female in Pacific Society (4, Sp) Cultural variations in gender systems and historical changes due to colonialism and development in Polynesia, Melanesia, Indonesia, and other Pacific Rim cultures.

ANTH 322 Anthropology of Bali (4, Sp) An introduction to the methodology of social anthropology, focusing on the culture of the Indonesian island of Bali.

ANTH 323 Regional Ethnology: Southeast Asia (4, Irregular) Peoples and cultures of southeast Asia, from the late Pleistocene to the present.

ANTH 324 Regional Ethnology: China (4, 2 years, Sp) Anthropological perspective of the ordinary citizens of the Peoples' Republic of China: peasants, workers, bureaucrats, students, and women.

ANTH 325 Global Studies Research Methods (4, Fa) Methods for field research in international settings include ethnography, archival work, surveying and documentation; preparation for overseas research and senior thesis. *Recommended preparation:* ANTH 205.

ANTH 326 Ethnography of European Culture (4, Irregular) Europe as a geographic area in terms of its linguistic, ethnic, racial, and cultural diversity; particular focus on peasant society and the Little Tradition.

ANTH 327 Anthropology of the Middle East and Islam (4, Sp) Explores written and visual ethnography for study of Middle East community, sociopolitical forms and religious life. Examines scriptural and living Islam and dynamics of contemporary Islamic revival.

ANTH 328m Culture Change and the Mexican People (4, Irregular) Culture change theories and methods (archaeology, community studies, participant-observation) used to examine the varied experiences of peoples in Mexico and the U.S. Southwest.

ANTH 329 Archaeology and Global Cultural Heritage (4) Exploration of the role archaeology plays in the creation of modern national, ethnic, racial and other types of identities worldwide.

ANTH 330m Culture, Gender and Politics in South Asia (4, Fa) Examination of violence, identity, law, religion, nationalism, development, caste, kinship, gender, and the South Asian diaspora.

ANTH 333m Forms of Folklore (4, Fa) Introduction to folklore as a discipline, including folklore research methods and theory. Core course for the minor in Folklore and Popular Culture.

ANTH 335 Comparative Muslim Societies (4, Irregular) Examines issues of nationality, religion, and culture among Muslim peoples in the Middle East, Africa, East Asia, and the Soviet Union from an anthropological perspective.

ANTH 336 Health, Gender and Ethnicity (4, Sp) (Enroll in SWMS 336)

ANTH 337 Anthropology of Warfare (4) Examination of the origins of warfare, its evolution and the changes it brought to human civilization. *Recommended preparation:* ANTH 202, ANTH 304.

ANTH 345 Politics, Social Organization, and Law (4, 2 years, Sp) Political and legal systems of primitive societies, social control, and structure.

ANTH 355 Urban Anthropology (4, Irregular) Exploration of empirical and analytical approaches employed by anthropologists in studying urban phenomena cross-culturally; urban origins, structure, and social processes.

ANTH 357 Culture of Genocide (4, FaSp) The comparative analysis of genocide in different cultures and historical moments in order to understand the processes through which genocide has been perpetuated, as well as different cultural responses to it. *Recommended preparation:* ANTH 100, ANTH 200L.

ANTH 360 Symbolic Anthropology (4, Fa) The role of symbols in the evolution of culture; symbolic aspects of myth, ritual, and social life. *Prerequisite:* sophomore standing.

ANTH 365 Life History in Anthropological Perspective (4, Irregular) Examination of one's life within its sociocultural context; study of family history, autobiography, diary, journal, and film; research and writing of a life history.

ANTH 370 Family and Kinship in Cross-Cultural Perspective (4, 2 years, Sp) Comparative examination of family and kinship in tribal, peasant, and complex societies, emphasizing non-Western cultures, societal and normative consequences of forms and functions in family.

ANTH 371m Cross-Cultural Research on Urban Gangs (4) Youth gang dynamics and their effects on institutions. Comparative analysis of Asian, African, and Mexican American gangs.

ANTH 372 Interpretation of Myth and Narrative (4, Fa) Oral narratives from non-Western cultures; communications about deeply-held beliefs, psychological tensions, social problems, and the structure of the mind.

ANTH 373 Magic, Witchcraft and Healing (4) Analysis of the practices of witches and witch doctors, priests, diviners and traditional healers in Western and non-Western societies, relating their practices to religion and medicine.

ANTH 374 Asian Americans: Ethnic Identity (4, FaSp) (Enroll in SOCI 375)

ANTH 375 Applied Anthropology (4, 2 years, Sp) Evaluation of cultural impact of policy and program designed to stimulate change in traditional communities. Fieldwork assignments in education, health, and development.

ANTH 376 Scientific Analysis in Archaeology (4) Examination of the range of scientific techniques and technologies used for the analysis and interpretation of material culture recovered during archaeological excavations. *Recommended preparation:* ANTH 202.

ANTH 380 Sex and Gender in Anthropological Perspective (4) Cultural construction of gender in a number of non-Western societies is compared to ideas of sex and sexual differences in American society.

ANTH 385m Men and Masculinity (4) (Enroll in SWMS 385m)

ANTH 390 Special Problems (1-4, Irregular) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

ANTH 395m African American Humor and Culture (4) (Enroll in AMST 395m)

ANTH 405 Evolutionary Medicine (4, Sp) Evolutionary, cultural and environmental factors in the emergence and existence of diseases; a Darwinian examination of illness in the human species.

ANTH 406 Theory and Method in Biological Anthropology (4) Historical and theoretical approaches to major issues in the field of biological anthropology. Includes human evolution, primatology, origins of culture, human biology.

ANTH 407 Peasant Society (4, Sp) Comparative study of the social, economic, political, and religious characteristics of peasant societies as they have existed and continue to exist in Asia, Africa, and Latin America.

ANTH 409 Indigenous Languages in Northern Ireland (4, Sm) Examination of indigenous languages in Northern Ireland, with a focus on the sociopolitical dimension of revitalization movement.

ANTH 410ab Ethnographic Field Methods and Practicum (4-4, FaSp) Survey of anthropological methods for acquiring and analyzing data. *a:* Ethnographic research methods and modes of analysis; development of a field research project. *b:* Implementation of the field project. *Prerequisite:* ANTH 201.

ANTH 415 Global Studies Senior Seminar (4, Fa) Preliminary analysis for research data for overseas research to compare results, discuss writing strategies and gain comparative perspective to prepare a senior thesis. *Recommended preparation:* ANTH 205, ANTH 325.

ANTH 420 Woman, Nature, Culture: The Behavioral Ecology of Women (4, FaSp) (Enroll in SWMS 420)

ANTH 425 Peoples and Cultures of Latin America (4, Irregular) Cultures of the indigenous peoples of South America; results of Spanish conquest and colonization; present folk societies and their cultures.

ANTH 435x Ethnic Diversity in China/Inner Asia (4) Tibetans, Mongols, Muslims and other minorities on the China and Inner Asian frontier will be surveyed through ethnohistories, lectures, films and guest lectures. Not available for graduate credit.

ANTH 440 History of Anthropological Theory (4, Sp) Ideas about man, culture, and society which have formed the field of anthropology as a research discipline; present trends and problems.

ANTH 445 African American Anthropology (4, FaSp) An examination of anthropological research on race and African American culture, from the 18th century to the present. *Recommended preparation:* AMST 385, ANTH 263.

ANTH 455 Cultural Ecology (4, Irregular) Ecological adaptation of human cultures, emphasizing the development of values in the context of constraints and incentives stemming from the environment.

ANTH 460 Economic Anthropology (4, Fa) Comparative study of human systems of production, distribution, and consumption; anthropological approaches to study of economic behavior; economic systems of primitive, peasant, and developing societies.

ANTH 470 Multidisciplinary Seminar in Visual Anthropology (2 or 4, Irregular) Application of broadcast journalism, cinema, and anthropology to ethnographic film making.

ANTH 472 Visual Techniques in Anthropology: Stills (4, Fa) Visual techniques for data collection and analysis in anthropological research. Visual anthropology research using 35 mm. photography skills, fieldwork procedures, data analysis, and presentation formats.

ANTH 475 Ethnographic Film Analysis (4, Irregular) Analysis of film as a tool for investigating primitive and modern cultures and societies.

ANTH 476 Ethnographic Film Theory from an Historical Perspective (4) Technologies and uses of, theoretical frameworks for, and the presentation styles of ethnographic materials are examined from an historical perspective.

ANTH 481L GIS for Archaeologists (4) Training of archaeology students in the use of GIS through the understanding of basic principles and theoretical restrictions of geospatial sciences. *Prerequisite:* ANTH 202, SSC 382.

ANTH 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

ANTH 491 Directed Research for Honors (4, Irregular) Individually guided research and readings culminating in the production of an honors thesis. *Prerequisite:* 3.0 GPA; ANTH 201 plus 8 units of upper-division anthropology courses.

ANTH 499 Special Topics (2-4, max 8, Irregular) Current literature: social change, comparative institutions, urbanization, ideology.

ANTH 501 History and Foundations of Anthropology (4, Fa) An historical survey of the development of theory and methods in social anthropology.

ANTH 502 Contemporary Theory in Anthropology (4, Sp) Continuation of ANTH 501, focusing on current models, methods, and issues in social anthropology.

ANTH 503 Regional Ethnography (4, Sp) An intensive analysis of the anthropology of a major culture area.

ANTH 506 Primate Behavior and Sociobiology (4) Advanced course on the behavior, ecology and sociobiology of living primates. Takes a Darwinian approach to behaviors such as parenting, mating, diet and feeding, competition, and demography.

ANTH 509 Key Topics in Linguistic Anthropology (4, FaSp) Introduction to key topics in linguistic anthropology with special focus on interrelations between language, identity, culture, gender, and power in the U.S. and beyond.

ANTH 510 Urban Anthropology (4, Fa) Intensive ethnographic analysis of specialized urban niches, micro-settings, ethnicity, community studies.

ANTH 554 Women in Global Perspective (4) (Enroll in SWMS 554)

ANTH 562 The Practice of Ethnography (4, Sp) Major approaches to ethnographic fieldwork are explored in classic cases.

ANTH 575 Seminar in Ethnographic Film (4, Fa) A survey of ethnographic film using both the dimensions of natural history descriptions and process, contrasted with naturalism and structuralism as tools of controlled comparison and analysis.

ANTH 576L Anthropological Media Seminar (4, max 8) A hands-on laboratory-based survey of pre-production techniques in video and audio production, including exercises to prepare students to shoot their own documentaries. *Recommended preparation:* visual anthropology background.

ANTH 577L Advanced Anthropological Media Seminar (4, max 8) A hands-on laboratory-based survey of post-production technologies, including editing both new and older footage. Students should be finishing their own documentaries. *Prerequisite:* ANTH 576.

ANTH 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

ANTH 593 Practicum in Teaching the Liberal Arts (2, FaSp) (Enroll in MDA 593)

ANTH 594abz Master's Thesis (2-2-0, FaSpSm) Credit on acceptance of thesis. Graded IP/CR/NC.

ANTH 599 Special Topics (2-4, max 8, Fa)

ANTH 601 Feminist Issues in Anthropology (4, FaSpSm) Feminist concerns in both Western and Non-Western societies are examined in relation to globalization; the practice of ethnography and issues of power.

ANTH 602 The Anthropology of Popular Culture (4, FaSpSm) The relationship between anthropology and popular culture is explored through a critical examination of the category "popular culture."

ANTH 603 Experiments in Ethnographic Writing (4, FaSpSm) The problems of representation involved in rendering experience into narrative are examined in a number of contemporary "experiments."

ANTH 604 Bodies and Practices (4, FaSpSm) The cultural construction of body image, embodied practice, race, sexuality and healing.

ANTH 605 Race: Performance, Politics, Cultural Production (4, FaSpSm) Focuses on the performance and social construction of race and its intersection with gender, sexuality, class, place, nation and empire.

ANTH 606 Seminar on Nationalism and Ethnicity (4) Cross-cultural analysis of nationalism and ethnicity from an ethnographic perspective. Graduate standing.

ANTH 650 Seminar in Ethnography and Interpretation (4) A seminar where issues in contemporary ethnography and interpretation are discussed, grouped around a theme of current concern, such as power and resistance, colonialism, Marxist approaches, feminism, etc. *Prerequisite:* ANTH 501.

ANTH 790 Research (1-12, FaSpSm) Research leading to the doctorate. Minimum 8 units, maximum number of units which may be applied to the degree to be determined by the department. Graded CR/NC.

ANTH 794abcdz Doctoral Dissertation (2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC.

Art History

Von KleinSmid Center 351
(213) 740-4552
FAX: (213) 740-8971
Email: arthist@dornsife.usc.edu
dornsife.usc.edu/ahis
Chair: Kate Flint, Ph.D.

Faculty

Professors: John Bowlt, Ph.D. (*Slavic Languages and Literatures*); Leo Braudy, Ph.D. (*English*); Kate Flint, Ph.D. (*English*); Selma Holo, Ph.D.; Eunice Howe, Ph.D.*; Carolyn M. Malone, Ph.D.; John Pollini, Ph.D.; Vanessa Schwartz, Ph.D. (*History*)

Associate Professors: Daniela Bleichmar, Ph.D.*; Sonya Lee, Ph.D.; Ann Marie Yasin, Ph.D. (*Classics*)

Assistant Professors: Suzanne Hudson, Ph.D.; Megan Luke, Ph.D.; Sean Roberts, Ph.D.

*Recipient of university-wide or school teaching award.

Art history combines the study of art with the study of culture. The undergraduate major not only receives sound training in the history of art but also a basis in other humanistic disciplines. The curriculum is designed to guarantee students a general knowledge of both western and eastern art, and to offer a variety of upper-division courses in specialized areas. Majors are exposed to a diversity of theoretical approaches and encouraged to sharpen their critical and conceptual thinking. This foundation has enabled many art history graduates to pursue advanced degrees in nationally recognized programs, to enter diverse fields, including law or business, and to pursue careers in the arts.

A special feature of the undergraduate program is the apprenticeship, which affords upper-division students the opportunity to work in the professional art world in return for elective credit. Students gain valuable job skills in local museums, galleries, auction houses, and art foundations. Apprenticeship placement is also available during the summer months throughout the United States.

Graduate students in art history pursue a wide range of subject matter, using a variety of methodologies and techniques. Graduates may also pursue parallel interests by taking courses in outside departments such as history, classics, East Asian languages and cultures, Slavic languages and literatures, French, German, Italian and others.

Graduate students are encouraged to participate in annual conferences and symposia. Travel grants are available through the department. In addition to an excellent slide library, electronic access to university library catalogues from home or office, courtesy privileges and cross-registration of course work at UCLA, our graduate students have access to numerous research opportunities in and around Southern California at institutions such as the Los Angeles County Museum, the Huntington Museum, the Archives of American Art, the Institute for Modern Russian Culture, the J. Paul Getty Museum and the Getty Research Institute for the History of Art and the Humanities.

Undergraduate Degree

Bachelor of Arts in Art History

In art history, undergraduates are provided with a sound, broad foundation in art from a variety of offerings. On this basis, exploration of the art of many eras and cultures proceeds in a program designed to develop an awareness of the integral role played by art as an expression of the human condition and society throughout history. A grade of C or higher is required in departmental courses for all undergraduate majors.

Curriculum Requirements

The Bachelor of Arts in Art History requires 128 units.

General Education and Diversity Requirements

Candidates for the Bachelor of Arts in Art History must complete the general education and diversity requirements of the USC Dornsife College of Letters, Arts and Sciences.

Major Requirements

The major requires 40 units as follows.

LOWER-DIVISION REQUIREMENTS (8 UNITS)		UNITS
AHIS 120	Foundations of Western Art, or	
AHIS 121	Art and Society: Renaissance to Modern	4
Choose one course from:		
AHIS 125	Arts of Asia: Antiquity to 1300	4
AHIS 126	Introduction to Asian Art: 1300 to the Present	4
AHIS 127	Arts and Civilizations of Ancient Middle and South America	4
AHIS 128	Arts of Latin America	4
		8

Additional Requirements (32 units)

AHIS 494 is required. Seven additional courses to include five courses with a minimum of one in each of four out of the following five areas of study, only one of which may be at the 200 level. Greek and Roman art and archaeology — AHIS 201, AHIS 321, AHIS 322; Medieval art — AHIS 220, AHIS 330; Renaissance and Baroque art — AHIS 230, AHIS 304, AHIS 343, AHIS 344; modern and contemporary art — AHIS 250, AHIS 255, AHIS 270, AHIS 361, AHIS 363, AHIS 364, AHIS 365, AHIS 368, AHIS 369, AHIS 370, AHIS 373; non-European traditions — AHIS 282, AHIS 319, AHIS 376, AHIS 377, AHIS 381, AHIS 384, AHIS 385, AHIS 386, AHIS 387, and two that must be at the 400-level. (AHIS 400x counts for elective credit only and may not be applied to the major.) AHIS 494 (the capstone course) may be taken in either the junior or senior year.

The following courses require written permission of the chair of the Art History Department: AHIS 495ab Undergraduate Honors Thesis (2-2) and AHIS 499 Special Topics (2-4, max 8).

Art History Honors Program

Candidates for the B.A. in the Department of Art History can earn a designation on their transcripts of departmental honors. Admission to the Honors Program is required.

Prerequisites: 3.5 overall GPA, 3.5 major GPA or better, completion of at least three upper-division art history courses at the time of admission, submission of an application form to the undergraduate faculty adviser.

Required for departmental honors: maintain GPA requirements stated above and complete AHIS 495ab Undergraduate Honors Thesis.

Bachelor of Arts in Interdisciplinary Archaeology

See Religion, page 460xx, for a complete listing.

Minor in Art History

Art history combines the study of art with the study of culture broadly conceived. The art history minor offers a concentrated course of study that includes a variety of objects from different historical periods and cultures in relation to their makers, patrons, viewers and critics. Students in the minor are trained to analyze visual images and information through a process of intensive looking, reading, research and writing.

Lower-division Curriculum (8 units)

CHOOSE TWO LOWER-DIVISION COURSES;

ONLY ONE MAY BE AT THE 200 LEVEL		UNITS
AHIS 120	Foundations of Western Art	4
AHIS 121	Art and Society: Renaissance to Modern	4
AHIS 125	Arts of Asia: Antiquity to 1300	4
AHIS 126	Introduction to Asian Art: 1300 to the Present	4
AHIS 127	Arts and Civilizations of Ancient Middle and South America	4
AHIS 128	Arts of Latin America	4
AHIS 201	Digging into the Past: Material Culture and the Civilizations of the Ancient Mediterranean	4
AHIS 220	Medieval Visual Culture	4
AHIS 230	Art and Culture in Early Modern Europe	4
AHIS 250	Modernity and Difference: Critical Approaches to Modern Art	4
AHIS 255	Cultural Wars: Art and Social Conflict in the Modern World	4
AHIS 270	L.A. Now: Contemporary Art in Los Angeles	4
AHIS 282	Korean Art	4

Upper-division Requirement (16 units)

Choose from 300- and 400-level AHIS courses. At least one course must be at the 400 level.

Minor in Visual Culture

A critical approach to art history is the departure point for the minor in visual culture, which is dedicated to the analysis of the visual arts, broadly defined to include fine

art, film and television, photography and video, illustrated books, advertising, architecture and design. Students are required to take two introductory courses in the history and theory of art. These courses will prepare them for focused study in one of three concentrations: (1) photography, film and the reproduction of images, (2) popular culture or (3) gender and sexuality.

REQUIRED COURSES

		UNITS
AHIS 100	Introduction to Visual Culture	4
COMM 306	The Communication Revolution and the Arts, or	
AHIS 250	Modernity and Difference: Critical Approaches to Modern Art (Gateway Course)	4

Four courses to be selected from one of the following three tracks:

(1) Photography, Film and the Reproduction of Images

AHIS 373	History of Photography	4
AHIS 469	Critical Approaches to Photography	4
ANTH 263	Exploring Culture Through Film	4
COLT 452	Representation and Cognition in Photography	4
COLT 480	Dada and Surrealism	4
CTCS 392	History of the American Film, 1925–1950	4
CTCS 393	History of the American Film, 1946–1975	4
CTCS 394	History of the American Film, 1977–Present	4
CTCS 400	Non-fiction Film and Television	4
ENGL 471	Literary Genres and Film	4
ENGL 481	Narrative Forms in Literature and Film	4
FAIN 310	Digital Photo Studio	4
FAPH 309a*	Advanced Photography	4
FAPR 311	Printmaking	4
FREN 320	French Cinema and French Society: 1900 to the Present	4
HIST 225	Film, Power, and American History	4
HIST 381	Cinema and History	4
HIST 481	Producing Film Histories	4
PHIL 446	Aesthetics and the Film	4

(2) Popular Culture

AHIS 370	Modern Art III: 1940–present	4
COLT 365	Literature and Popular Culture	4
COMM 384	Interpreting Popular Culture	4
COMM 450	Visual Culture and Communication	4
COMM 455	Advertising and Society	4
COMM 458	Race and Ethnicity in Entertainment and the Arts (prerequisite: COMM 300)	4
CTCS 392	History of the American Film, 1925–1950	4

CTCS 393	History of the American Film, 1946–1975	4
CTCS 394	History of the American Film, 1977–Present	4
CTCS 404	Television Criticism and Theory	4
ENGL 392	Visual and Popular Culture	4
ENGL 471	Literary Genres and Film	4
ENGL 481	Narrative Forms in Literature and Film	4
HIST 380	American Popular Culture	4
PAS 400	New Models of Art in City-Space	4
PHIL 446	Aesthetics and the Film	4

(3) Gender and Sexuality

AHIS 304	Italian Renaissance Art: Old Masters and Old Mistresses	4
AHIS 363	Race, Gender, and Sexuality in Contemporary Art	4
ARCH 442	Women's Space in History: "Hussies," "Harems" and "Housewives"	4
COLT 480	Dada and Surrealism	4
COMM 395	Gender, Media and Communication	4
COMM 465	Gender in Media Industries and Products	4
CTCS 192	Race, Class, and Gender in American Film	4
CTCS 412	Gender, Sexuality and Media	4
ENGL 476	Images of Women in Contemporary Culture	4
ENGL 478	Sexual/Textual Diversity	4
HIST 245	Gender and Sexualities in American History	4
SOCI 437	Sexuality and Society	4
Total units required		24
*32 units if students select FAPH 309a Advanced Photography with 8 units of prerequisites		

Interdisciplinary Minor in Early Modern Studies

This minor brings together the resources of the Departments of English, History and Art History to study the literatures and cultures of Europe and the Americas from the late medieval period to 1800. For complete listing of requirements, see the Department of English, page 340xx.

Graduate Degrees

Admission

Admission to all programs is granted through the Graduate School in conjunction with the Department of Art History; all applicants must meet the requirements of both. Interviews are strongly encouraged.

All applicants must complete the department's supplemental application form, which may be obtained by writing: Graduate Programs, Art History Department, Von KleinSmid Center 351, University of Southern California, Los Angeles, CA 90089-0047.

Complete details for all graduate programs can be found in the *Guidelines for Graduate Studies in Art History*, obtainable upon admission.

Areas of Concentration

Greek and Roman Art and Archaeology, Medieval Art, Renaissance Art, Baroque Art, 18th and 19th Century European Art, Modern and Contemporary Art, Chinese and Japanese Art, Latin American art and art of the ancient Americas.

Master of Arts, Art History

The department does not accept applicants for the Master of Arts in art history. Although the M.A. is not offered as a terminal degree, but only en route to the Ph.D., a student may be eligible for the M.A. on leaving the program after two years. A minimum of 32 units is required for the degree, and the student must pass the second year review which includes the departmental equivalent of a thesis: a revised seminar paper demonstrating original thought, research skills and writing proficiency. The opportunity to gain experience as a teaching assistant is available on a competitive basis. Transfer work applicable to the M.A. program must have been completed within seven years of the date of application.

Degree Requirements

A minimum of 32 units, usually taken during a two-year period, is required for the Master of Arts in Art History, to be distributed as follows:

REQUIRED COURSES	UNITS
AHIS 500	Methods and Theory of Art History
	4
Additional 500-level courses	28
	32

Course Distribution

Courses will be at the 500 level; 400-level courses may be accepted with approval of the graduate adviser. No more than two seminars with the same course number can be taken for credit toward the master of arts. AHIS 500 normally must be taken in the first semester of study.

Foreign Language Requirement

All candidates must pass a reading proficiency examination in one language, normally French or German. Substitutions may be made upon faculty recommendation and approval of the chair of art history when it is deemed appropriate to the student's course of study (i.e., Italian, Chinese, Japanese, Greek, etc.). The language requirement should be completed by the end of the first year.

Certificate in the History of Collecting and Display

This program, open to University of Southern California Ph.D. students of art history as well as qualified students from other USC departments with written permission from their home department and the Department of Art History, is devoted to the study of the history of collecting and display of works of art and related materials across a broad chronological and geographical spectrum.

The program provides a means of advancing knowledge about the presentation, circulation and consumption of works of art, as distinct from the more traditional art historical investigation of the conditions surrounding their production. Additionally, this program is designed

to remedy a widely perceived disjunction between the ways art history is practiced in the museum and the academy. Each academic department will determine the number of units completed which may be applied to the student's graduate degree in that department.

REQUIRED COURSES		UNITS
AHIS 501	Problems in the History and Theory of Collecting and Display	4
AHIS 504	Museum Research Assistantship	1
Two of the following courses:		
AHIS 502	Markets, Value and the Institutions of Art	4
AHIS 503	Categories and Collections	4
AHIS 550	Art, Business and the Law	4
		13

Graduate Certificate in Visual Studies

The field of visual studies encompasses a diverse range of images and artifacts as well as the history, processes and technologies of vision itself. This certificate will provide Ph.D. students with the tools necessary to think critically about visual objects and experience and to apply that thinking to their ongoing scholarly work and doctoral research. Students will combine the sustained analysis of specific representations with attention to broader philosophical frameworks and historical conditions.

Graduate students intending to concentrate in visual studies must be admitted to a Ph.D. program at USC. While fulfilling all the requirements for their departmental graduate degree, they may also earn a certificate of competency in visual studies. To receive this certificate, students must take MDA 501 Introduction to Visual Studies: Methods and Debates, a team-taught MDA 599 course, and two other graduate seminars from an approved list of relevant courses, 500 level and above, for a total of at least 16 units. Directed research may not be taken toward certificate requirements.

In addition to the completion of these course requirements, students must demonstrate a focus on visual studies as part of their doctoral dissertation. Alternatively, they may take an oral examination based on three research papers they have written within the context of their visual studies course work. The oral exam will be administered by faculty members affiliated with the visual studies graduate certificate. Faculty will be responsible for judging the adequacy of the visual studies component in the student's dissertation or oral examination.

CERTIFICATE REQUIREMENTS (8 UNITS)		UNITS
MDA 501	Introduction to Visual Studies: Methods and Debates	4
MDA 599	Special Topics	2-4, max 8

APPROVED CERTIFICATE COURSES (8 UNITS)		UNITS
AHIS 501	Problems in the History and Theory of Collecting and Display	4
AHIS 505	Seminar in Feminist Theory and Visual Culture	4

AHIS 515	Seminar in Contemporary Art	4, max 16
AHIS 529	Art, Science and Technology	4
ANTH 502	Contemporary Theory in Anthropology	4
ANTH 576L	Anthropological Media Seminar	4
ANTH 577L	Advanced Anthropological Media Seminar	4
ANTH 602	The Anthropology of Popular Culture	4
COMM 544	The Arts and New Media Seminar: Interpreting Popular Culture	4
COMM 584	Seminar: Non-Fiction Film/Video	4
CTCS 511	Seminar: Avant-Garde Film/Video	4
CTCS 518	Cultural Theory	4
CTCS 677	Proseminar in Chinese Visual Culture	4
EALC 535	Contemporary Literature and Cultural Theory	4
ENGL 502	Literature and Interdisciplinary Studies	4, max 12
ENGL 620	Fine Art and Interdisciplinary Studies	4, max 12
FA 551	Weimar Culture	4
GERM 581	Modernity and its Visual Cultures	4
HIST 520	Research Seminar on Modern Visual Culture	4
HIST 620	Practice of Public Art	2-6, max 12
PAS 575	Public Space, the Public Realm and Public Art	3
PAS 585	Seminar in Russian Culture and the Arts	3, max 9
SLL 665	Seminar in Contemporary Theatre	4
THTR 525	Seminar in Aesthetics of the Theatre	4
THTR 535		

Doctor of Philosophy

Application deadline: December 1.

The doctor of philosophy in the Art History program normally requires at least three years of course work and two years of dissertation research. Applicants may be admitted directly into the program after receiving the B.A. Other applicants may already hold an M.A. in art history or the equivalent from USC or another accredited school.

Every student will be subject to departmental screening procedures, which involve periodic review by the art history graduate committee. The committee may recommend at any time, after a written warning, based on a student's grades, evaluation of instructors or rate of progress toward the degree, that a student be dropped from the program. Such recommendations will become effective at the end of the semester during which the recommendation is made.

Course Requirements

Master of Arts and Doctor of Philosophy units total 60. Up to 32 master of arts units from USC or 16 from other institutions may be transferred with approval of the

faculty. Transfer work applicable to the Ph.D. program must have been completed within 10 years of the date of application. AHIS 500, or equivalent, is required of all graduate students. Four units are for work on the dissertation. (Two units of dissertation credit each semester — including summer — for a minimum registration period of two semesters.)

Foreign Language Requirements

All candidates must pass reading proficiency examinations in a minimum of two languages, normally French and German or the requisite languages in Asian art. Substitutions and/or additions may be made with faculty recommendation and approval of the chair of the Art History Department when appropriate to the student's program. Additional foreign language beyond the minimum may be required depending on the student's program of study. All language requirements must be completed prior to taking the qualifying exam.

Screening Examinations

Passing the following procedures are prerequisite to continuation in the doctoral program, as stated in the departmental graduate guidelines. Before the student has completed 24 units, the first-year examination must be passed. Before the student has completed 48 units, the second-year review must be passed.

Qualifying Examination

At the end of the second year, the student will nominate a five-member qualifying exam committee for the qualifying examination that includes one member from outside the Department of Art History. The student is expected to pass the qualifying examination in a major field and satisfy the requirements for the minor and outside fields by the end of the third year. Forms for permission to take the qualifying examination must be submitted at least 60 days before the date of the scheduled examination. The written portion of the examination will be followed by an oral examination. The oral examination will be given to discuss in greater depth the student's knowledge of the dissertation proposal; the oral lasts approximately two hours. After passing the qualifying examination, the student will be admitted to candidacy for the Ph.D.

Dissertation

Following the completion of the qualifying exam, the qualifying exam committee will be reduced to three members, including one member from outside the department, who will guide and finally approve the dissertation.

Courses of Instruction

ART HISTORY (AHIS)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

AHIS 001x Web Site Authoring and Design (2, FaSp)

Course focuses on the World Wide Web as a teaching tool. Students will construct a Web site as a final project, utilizing a hands-on computer laboratory. Not available for degree credit. Graded CR/NC.

AHIS 100 Introduction to Visual Culture (4, Sp) The description and analysis of various forms of visual culture, including both mass media and “high” art representations, both Western and non-Western images.

AHIS 120g Foundations of Western Art (4, Fa) European art in its historical, cultural and social context. Painting, sculpture and architecture presented within a theoretical framework that introduces art history as a discipline.

AHIS 121g Art and Society: Renaissance to Modern (4, Sp) European art and its legacy in the Americas. Painting, sculpture, architecture and other visual media considered in relation to social and cultural history.

AHIS 125g Arts of Asia: Antiquity to 1300 (4, Fa) An introduction to the major art forms and monuments of religious art in India, Southeast Asia, China, and Japan from prehistory to 1300.

AHIS 126g Introduction to Asian Art: 1300 to the Present (4, Sp) A survey of the art and architecture of India, China, Korea, and Japan from 1300 to the present.

AHIS 127g Arts and Civilizations of Ancient Middle and South America (4, Fa) A survey of the art, architecture, and archaeology of the diverse array of peoples and cultures in ancient Mesoamerica and the South American Andean Mountains.

AHIS 128g Arts of Latin America (4, Sp) Survey of the art, architecture, and visual culture of Latin America from the colonial period to the present, focusing on connections to culture and society.

AHIS 201g Digging into the Past: Material Culture and the Civilizations of the Ancient Mediterranean (4, Sp) A broad survey, covering some 8,000 years and focusing on the material culture of the ancient world in a historical and social context.

AHIS 220g Medieval Visual Culture (4, Fa) Medieval visual culture as an introduction to the Christian heritage of western civilization and to the interaction of Church and state from the 3rd to the 13th century.

AHIS 230 Art and Culture in Early Modern Europe (4) Survey of European art from the 15th to the 17th century. Case studies in Renaissance and Baroque art with emphasis on artists in major urban centers.

AHIS 250m Modernity and Difference: Critical Approaches to Modern Art (4, Fa) Consideration of various categories of “The Modern” as they have been constructed in Western art of the late 19th and 20th centuries.

AHIS 255g Culture Wars: Art and Social Conflict in the Modern World (4, FaSp) Examination of social conflicts and political controversies in American culture through the lens of visual art and photography. *Concurrent enrollment:* WRIT 140.

AHIS 270 L.A. Now: Contemporary Art in Los Angeles (4) Explores the production, display and critical reception of contemporary art, taking Los Angeles as its laboratory.

AHIS 282 Korean Art (4) Introduction to the richness and complexity of artistic expression in Korean art through the study of painting, sculpture, ceramics, and architecture through the 19th century.

AHIS 284g Art in Context: Introduction to the Chinese Visual World (4) A survey of Chinese art from antiquity to the early modern period, emphasizing the context in which art objects were produced, displayed, circulated and consumed.

AHIS 304m Italian Renaissance Art: Old Masters and Old Mistresses (4) An introduction to Italian Renaissance art with emphasis on the role of gender and sexuality in the creation of “masterpieces.”

AHIS 318 Arts of the Ancient Andes (4) Survey of the art and architecture of the ancient cultures of the Andes in South America.

AHIS 319 Mesoamerican Art and Culture (4) Introductory survey of painting, sculpture, and architecture of Mesoamerica before the Spanish conquest presented in their social, cultural, and political contexts.

AHIS 320 Aegean Archaeology (Enroll in CLAS 323)

AHIS 321 Greek Art and Archaeology (4, Fa) An introductory survey of artistic works and monuments of ancient Greece from the Geometric through the Hellenistic period (c. 1000–30 B.C.).

AHIS 322 Roman Art and Archaeology (4, Sp) An introductory survey of the most important works of art and monuments of ancient Rome from the beginnings of the city through Constantine (8th century B.C. to 4th century A.D.).

AHIS 324 Late Antique Art and Archaeology (4) (Enroll in CLAS 324)

AHIS 325 Roman Archaeological Excavation: Methods and Practice (4, Sm) Students learn about archaeological methodology and practice by visiting archaeological sites in Rome and excavating a nearby ancient site.

AHIS 328 Colonial Latin American Art (4, FaSpSm) A survey of the art, architecture, and visual culture of colonial Latin America, focusing on connections to culture and society.

AHIS 330 Medieval Art (4) Introductory survey of art and architecture of Christianity from 300–1300; biblical themes and classical traditions; cultural and historical analysis of medieval art.

AHIS 343 Renaissance Art (4) Painting, sculpture and architecture in Renaissance Europe, north and south, from 1300–1600. (Duplicates credit in former AHIS 340 and AHIS 342.) *Recommended preparation:* AHIS 120 or AHIS 121.

AHIS 344 Baroque Art (4) Painting, sculpture and architecture in 17th century Europe, north and south. (Duplicates credit in former AHIS 353 and AHIS 356.)

AHIS 357 History of French Art 1860–1920 (4, Sp) (Paris Semester only) Exploration of the main movements of late 19th and early 20th century French art using the resources of Parisian museums and monuments. Visits to Paris museums are an integral part of the course work. *Recommended preparation:* familiarity with modern European history.

AHIS 361 British Art, 1730–1890 (4) A survey of art and architecture in Britain from the age of Hogarth to Art Nouveau. Among the artists studied are Constable, Turner, and the Pre-Raphaelites. (Duplicates credit in former AHIS 461.)

AHIS 363m Race, Gender, and Sexuality in Contemporary Art (4) Focuses on issues of race, gender, and sexuality in American art of the last three decades. *Recommended preparation:* AHIS 121.

AHIS 364 Myths, Arts, Realities: Visual Culture in California, 1849 to the Present (4) Diverse interpretations of “the California experience and lifestyle” in paintings, sculpture, photography, cinema, public art and popular culture of the last 150 years.

AHIS 365m African American Art (4) A survey of the fine arts produced by people of African descent in the United States from the nation’s inception in the late 18th century until the contemporary movement.

AHIS 368 Modern Art I: 1700–1850 (4) A cultural and historical examination of European art and architecture from 1700 (Rococo) to 1850 (Realism), focusing on the beginnings of modernism in the age of revolution. (Duplicates credit in former AHIS 360.)

AHIS 369 Modern Art II: 1851–1940 (4) An examination of European modern art and design, focusing on industrialization, urbanism, primitivism, colonialism, and their relations to the arts.

AHIS 370 Modern Art III: 1940 to the Present (4, Sp) Questions of social engagement and political structure address this examination of major movements in art since 1940.

AHIS 373 History of Photography (4, Irregular) Explores key moments in the history of photography from its invention to the present. Issues include modernity and mass culture; photography as a fine art; technologies of vision.

AHIS 376 Introduction to African Art (4) An introduction to sub-Saharan art (sculpture, textiles, architecture, masquerades, performances and body arts) in the context of issues of function, gender, politics and ethnic diversity.

AHIS 377 Spanish Colonial Art and Architecture (4) Spanish Colonial Revival arts and architecture examined in view of Spanish, Mexican and Indian ethnic sources and regional movements of the 1920s, '30s and '70s.

AHIS 378 Modern Russian Art (4) (Enroll in SLL 378)

AHIS 381 Visual Culture of Asia (4, max 8, FaSp) Exploration of one or more major traditions of visual culture in Asia through cross-cultural, interdisciplinary perspectives.

AHIS 384 Early Chinese Art (4) A survey of Chinese architecture, ceremonial bronzes, sculpture, ceramics and painting from antiquity through the T'ang Dynasty.

AHIS 385 Later Chinese Art (4) A survey of Chinese painting from 900 to the present, emphasizing the role of painting within the context of Chinese intellectual history.

AHIS 386 Early Japanese Art (4) A survey of Japanese Buddhist and secular architecture, sculpture and painting from antiquity to 1333, stressing the relation of art to cultural context.

AHIS 387 Later Japanese Art (4) A survey of Japanese architecture, garden design, ceramics, and painting from 1333 to the present, stressing the role of art within cultural context.

AHIS 390 Special Problems (1, max 4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

AHIS 400x Undergraduate Apprenticeship (2, max 4, FaSpSm) Independent work in art museums, galleries or art history related institutes supervised by on-site professionals and USC faculty. Not available for credit to art history majors. Available to upper-division art history majors only. Graded CR/NC.

AHIS 411 Studies in Arts of the Ancient Americas (4, max 16) In-depth exploration of a specified topic in the arts of the ancient Americas, which includes North, Central, and South America.

AHIS 415 Object-Worlds: Histories and Theories of Things (4) This seminar-style course develops strategies for analyzing what material culture of the past can tell us about the individuals and cultures that interacted with it.

AHIS 420 Studies in Ancient Art (4, max 16, Irregular) In-depth exploration of specified topics within the area of Ancient art and architecture.

AHIS 425 Interdisciplinary Studies in Classical Art and Archaeology: Research and Methodology (4, max 8, Irregular) Each year a different topic in Greek and Roman art and archaeology will be examined in depth. Emphasis on interdisciplinary methodological approaches and research techniques.

AHIS 427 Archaeological Theories, Methods, and Practice (4, FaSp) Examined are various theoretical approaches, methods, and practice of archaeology in a seminar style format, with lectures, oral presentations, and museum visits.

AHIS 428 Studies in Colonial Latin American Art (4, FaSpSm) In-depth exploration of specified topics within colonial Latin American art.

AHIS 429 Studies in Art, Science, and Technology (4, FaSpSm) Examination of the connections between art, science, and technology, focusing on a specific time period and/or set of questions.

AHIS 430 Studies in Renaissance Art (4) In-depth exploration of specified topics within the area of Renaissance art and architecture. (Duplicates credit in former AHIS 444 and AHIS 446.) *Recommended preparation:* AHIS 230 or AHIS 330.

AHIS 433 Studies in Medieval Art (4, max 16) In-depth exploration of specified topics within the area of Medieval art and architecture.

AHIS 449 History of Prints and Drawings (4, Irregular) Aspects of the history of the graphic arts; stylistic and technical considerations may both be included or specific areas stressed at the choice of the instructor.

AHIS 453 Studies in Baroque Art (4, max 16) In-depth exploration of specified topics within the area of 17th century art and architecture. *Recommended preparation:* AHIS 230 or AHIS 344.

AHIS 460 Studies in 18th and 19th Century Art (4, max 8) In-depth exploration of specified topics within the area of 18th and 19th century art and architecture.

AHIS 465 Studies in American Art (4, max 8) In-depth exploration of a specified topic in the history of American art.

AHIS 466 Studies in the Decorative Arts and Design (4) Exploration of a specified topic in the history of the decorative arts and design in Europe and America.

AHIS 467 19th Century French Art (4, FaSp) Exploration of the main movements in 19th century French art, using the city of Paris and its museums. Field trips in conjunction with classwork. Advisement is required for credit for art history majors.

AHIS 468 Studies in Modern Art (4, max 8, Irregular) In-depth exploration of a specified topic in art of the late 19th and/or early 20th centuries.

AHIS 469 Critical Approaches to Photography (4, Irregular) Selected problems in the history, theory and criticism of photography; recent scholarship considered in relationship to specific photographers and photographic images.

AHIS 470 Studies in Contemporary Art (4) In-depth exploration of specified topics within the area of contemporary art and architecture.

AHIS 475m Blackness in American Visual Culture (4) A historical overview of how people of African descent have been represented visually in American culture.

AHIS 477 Studies in Visual and Material Culture (4, max 16) In-depth exploration of selected topics in visual and material culture.

AHIS 481 Studies in Japanese Art (4, max 16) In-depth exploration of specified topics within the area of Japanese art and architecture.

AHIS 484 Studies in Chinese Art (4, max 16) In-depth exploration of specified topics within the area of Chinese art and architecture.

AHIS 486 Introduction to Museums: Past, Present, and Future (4, Sp) Comprehensive exploration of the role of art museums in society. Inquiry into the present and future potential of museums as a complex force in society. Not open to graduate students.

AHIS 490x Directed Research (1-8, max 12, FaSp) Individual research and readings. Not available for graduate credit.

AHIS 494 Undergraduate Proseminar in Art History (4, FaSp) Historiography and methodology: introduction to techniques of research and writing. Required of all art history majors, preferably in the junior year.

AHIS 495ab Undergraduate Honors Thesis (2-2, FaSp) Research and writing of original thesis under guidance of faculty member. Departmental approval.

AHIS 496 Paintings in the Prado Museum (4, Irregular) (Madrid Center only) From Romanticism through Goya in relation to European and Mediterranean antecedents using paintings in the Prado Museum. Field trips in conjunction with classwork.

AHIS 497 Senior Seminar in Early Modern Studies (4, Sp) (Enroll in ENGL 497)

AHIS 499 Special Topics (2-4, max 8) Comprehensive exploration of particular aspects of the history of art.

AHIS 500 Methods and Theory of Art History (4, Fa) Methodologies, theories and critical traditions that have shaped the discipline. Emphasis will vary depending on faculty. Required of all first-year M.A. and Ph.D. candidates. Open to graduate or limited status students in art history only.

AHIS 501 Problems in the History and Theory of Collecting and Display (4) Explores the history of patronage, collecting and display in the private and the public spheres (e.g., salons, galleries, museums, and international expositions).

AHIS 502 Markets, Value and the Institutions of Art (4) Intensive examination of economic, societal, and aesthetic frameworks in which art was sold, bought, exhibited and reviewed. Explores how perceptions of art and value were shaped.

AHIS 503 Categories and Collections (4) How collections are organized by category — e.g., period, culture, materials, or mode of production. Examines collecting protocols, historiography and modes of collecting and viewing associated with that category.

AHIS 504 Museum Research Assistantship (1, FaSp) Working within an institution with a collection and reflecting, in class meetings, upon how collections are formed, shaped and used.

AHIS 505 Seminar in Feminist Theory and Visual Culture (4) Recent feminist scholarship in art history, cultural studies, film theory. Feminist theory in relation to art from the late 19th and 20th centuries. Occasional film screenings.

AHIS 509 Seminar in Arts of the Ancient Americas (4, max 16) In-depth exploration of a specified topic in the arts of the ancient Americas, which includes North, Central, and South America.

AHIS 510 Seminar in Ancient Art (4, max 16)

AHIS 511 Seminar in Medieval Art (4, max 16)

AHIS 512 Seminar in Renaissance Art (4, max 16)
Recommended preparation: relevant languages.

AHIS 513 Seminar in Baroque Art (4, max 16)

AHIS 514 Seminar in 18th and 19th Century European Art (4, max 16)

AHIS 515 Seminar in Contemporary Art (4, max 16)

AHIS 517 Seminar in Korean Art (4, max 8) In-depth exploration of a specified topic in the history of Korean art.

AHIS 518 Seminar in Chinese Art (4, max 16)

AHIS 519 Seminar in Japanese Art (4, max 16)

AHIS 520 Seminar in Modern Art (4, max 16) In-depth exploration of a specified topic within the area of European art of the late 19th and early 20th centuries.

AHIS 521 Seminar in Modern German Art (4, max 8) In-depth exploration of a specific topic in modern German art of the 19th and early 20th centuries.

AHIS 522 Writing (and) the History of Art (4) Examination of how various forms of writing and different contexts of presentation shape the visual experience of art and the understanding of its history, encouraging students to think critically about how to develop a voice of their own.

AHIS 524 Readings in Greek and Roman Authors on Ancient Art and Monuments (4, max 8) Focuses on readings of ancient Greek and Roman authors writing on Greek and Roman art, monuments and topography. Topics vary from year to year. Departmental approval.

AHIS 525 Seminar in American Art (4) In-depth exploration of a specified topic in the history of American art.

AHIS 528 Seminar in Colonial Latin American Art (4, FaSpSm) In-depth exploration of specific topics in the arts of colonial Latin America.

AHIS 529 Seminar in Art, Science, and Technology (4, FaSpSm) In-depth exploration of the connections between art, science, and technology, focusing on a specific time period and/or set of questions.

AHIS 550 Art, Business and the Law (4) Investigation of the financial, legal and ethical dimensions of the collection and display of cultural property by private and public institutions. Participants will explore the legal and ethical issues related to the public use of museums and visual reproductive technologies.

AHIS 590 Directed Research (2-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

AHIS 593 Practicum in Teaching the Liberal Arts (2, FaSp) (Enroll in MDA 593)

AHIS 594abz Master's Thesis (2-2-0) Credit upon acceptance of thesis. Graded IP/CR/NC.

AHIS 599 Special Topics (2-4, max 8, Irregular) Comprehensive exploration of particular aspects of the history of art.

AHIS 790 Research (1-12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

AHIS 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC.

Biological Sciences

Hancock Foundation Building 107
(213) 740-2777

FAX: (213) 740-8123

Email (undergraduate programs):

biodept@dornsife.usc.edu

Email (graduate programs):

marinebi@dornsife.usc.edu

molecule@dornsife.usc.edu

ieb@dornsife.usc.edu

bnro_admissions@dornsife.usc.edu

Chair: Douglas Capone, Ph.D.

Faculty

Anna H. Bing Dean's Chair in the USC Dornsife College of Letters, Arts and Sciences and Professor of Biological Sciences, Neurology, Physiology and Biophysics: Steve A. Kay, Ph.D.

University Professor and ARCO/William F. Kieschnick Chair in the Neurobiology of Aging: Caleb E. Finch, Ph.D.

University Professor and Milo Don and Lucille Appleman Professor of Biological Sciences: Larry W. Swanson, Ph.D.

University Professor and USC Associates Chair in Natural Sciences: Michael S. Waterman, Ph.D.

Distinguished Professor and Ester Dornsife Chair in Biological Sciences: Norman Arnheim, Ph.D.*

McCulloch-Crosby Chair in Marine Biology: Jed A. Fuhrman, Ph.D.*

William and Julie Wrigley Chair in Environmental Studies: Douglas G. Capone, Ph.D.

Provost Professor of Biological Sciences and Biomedical Engineering: Scott Fraser, Ph.D.

Paxson H. Offield Professor of Fisheries Ecology: Dennis Hedgcock, Ph.D.

Gabilan Assistant Professor of Biological Sciences: Irene Chiolo, Ph.D.

Gabilan Assistant Professor of Biological Sciences: Naomi Levine, Ph.D.

Professors: Len Adelman, Ph.D. (Computer Science); Jan P. Amend, Ph.D. (Earth Sciences); Oscar M. Aparicio, Ph.D.; Michael A. Arbib, Ph.D. (Computer Science); Robert F. Baker, Ph.D.; Gerald Bakus, Ph.D.; Christopher Boehm, Ph.D.; David Bottjer, Ph.D. (Earth Sciences); Sarah Bottjer, Ph.D.; David Caron, Ph.D.*; Lin Chen, Ph.D.; Ting Chen, Ph.D.; Xiaojiang Chen, Ph.D.; Cheng-Ming Chuong, Ph.D. (Pathology); Kelvin Davies, Ph.D. (Gerontology); Casey Donovan, Ph.D.; Katrina Edwards, Ph.D.; Tuck Finch (Gerontology); Henryk Flashner, Ph.D. (Aerospace and Mechanical Engineering); Susan Forsburg, Ph.D.; Myron F. Goodman, Ph.D.; Albert A. Herrera, Ph.D.* (Vice Chair); Judith Hirsch, Ph.D.; David Hutchins, Ph.D.; Dale Kiefer, Ph.D.; Chien-Ping Ko, Ph.D.; Michael Lieber, Ph.D. (Pathology); Emily R. Liman, Ph.D.; Donal T. Manahan,

Ph.D.; William O. McClure, Ph.D.*; Jill McNitt-Gray, Ph.D.; James W. Moffett, Ph.D.; Ken Neelson, Ph.D. (*Earth Sciences*); Sergey Nuzhdin, Ph.D.; John A. Petruska, Ph.D.; Michael Quick, Ph.D.; Richard Roberts, Ph.D. (*Chemistry*); Sergio Sanudo-Wilhelmy, Ph.D.; Richard Simerly, Ph.D. (*Medicine*); Malcolm Snead, Ph.D. (*Dentistry*); Craig Stanford, Ph.D.; Cornelius W. Sullivan, Ph.D.; Fengzhu Sun, Ph.D.; Miriam M. Susskind, Ph.D.; John Tower, Ph.D.; Alan Watts, Ph.D.; Xianghong Zhou, Ph.D.

Associate Professors: Frank Alber, Ph.D.; Donald Arnold, Ph.D.; John Callaghan, Ph.D.; Liang Chen, Ph.D.; Suzanne Edmands, Ph.D.; Steven Finkel, Ph.D.; Robert Girandola, Ph.D.; Andrew Gracey, Ph.D.; Joe Hacia, Ph.D. (*Biochemistry and Molecular Biology*); John F. Heidelberg, Ph.D.; David D. McKemy, Ph.D.*; Matthew Michael, Ph.D.; Peter Qin, Ph.D. (*Chemistry*); Lorraine Turcotte, Ph.D.; Eric A. Webb, Ph.D.; Wiebke Ziebis, Ph.D.

Assistant Professors: Irene Chiolo, Ph.D.; Matthew Dean, Ph.D.; Roberto Delgado, Ph.D.; Dion Dickman, Ph.D.; Ian Ehrenreich, Ph.D.; Karla B. Heidelberg, Ph.D.; Scott Kanoski, Ph.D.; Fabien Pinaud, Ph.D.; Matthew Pratt, Ph.D. (*Chemistry*); Peter Ralph, Ph.D.; Remo Rohs, Ph.D.; Gary Scott, Ph.D. (*Rossier School of Education*); Andrew Smith, Ph.D.; Xuelin Wu, Ph.D.

Adjunct Professors: Luis Chiappe, Ph.D.; Kirk Fitzhugh, Ph.D.; Gordon Hendler, Ph.D.; Joel W. Martin, Ph.D.; Xiaoming Wang, Ph.D.

Adjunct Associate Professors: Rodolfo Iturriaga, Ph.D.; Lei Li, Ph.D.; Christine Thacker, Ph.D.

Adjunct Assistant Professors: Rahul Jandial, Ph.D.; Arshad Khan, Ph.D.; Judith Lemus, Ph.D.; Witaya Maythiykom, Ph.D.; Beth Orcutt, Ph.D.; Philip Requejo, Ph.D.; Regina Wetzler, Ph.D.

Professors (Research): Burton H. Jones, Ph.D.; Simon Tavaré, Ph.D.

Associate Professors (Research): Mihail Bota, Ph.D.; Linda Duguay, Ph.D.; Yuri Gorby, Ph.D.; Magnus Nordborg, Ph.D.

Assistant Professors (Research): Peter Calabrese, Ph.D.; Fei-Xue Fu, Ph.D.; Juliette Hart, Ph.D.; Joel Hahn, Ph.D.; Myrna Jacobson, Ph.D.; Wenyan Li, Ph.D.; Phuong Pham, Ph.D.; Rick H. Thompson, Ph.D.

Senior Lecturer: Gudrun Floyd, M.S.

Lecturers: Tamara Espinet, M.S.; Ricky Hang, M.A.; Erik Kolb, Ph.D.; Helaine Lopes, Ph.D.; Alberto Vallejo, Ph.D.

University Professor Emeritus and William M. Keck Chair Emeritus in Psychology and Biological Sciences: Richard F. Thompson, Ph.D. (*Psychology*)

Emeritus Professors: Michael Appleman, Ph.D.; Richard Deonier, Ph.D.; Arnold S. Dunn, Ph.D.; Russel Zimmer, Ph.D.

**Recipient of university-wide or college teaching award.*

Academic Program Staff

Directors of Instructional Laboratories: Celeste Chong-Cerrillo, Ph.D.; Michael Moore, Ph.D.; Angel Tabancay, Ph.D.; Gorjana Bezmalinovic, M.S.; Mary Ann Bohland-Matveyenko, Ph.D.

Programs

The Department of Biological Sciences has research faculty with specialties in three disciplines: marine environmental biology, molecular and computational biology, and neurobiology. A diversity of upper-division undergraduate and graduate courses permits biology majors to choose an emphasis in any of these three disciplines.

The department offers both B.A. and B.S. degrees in biological sciences and an honors program in which a student can earn either a B.A. or a B.S. degree in biological sciences with honors. The department also offers both B.A. and B.S. degrees in human biology. The B.S. in biochemistry is offered as a joint program with the Department of Chemistry. The honors program is available to students who maintain a GPA of 3.5 in the sciences and who have completed their freshman year. The honors program includes research opportunities, seminars and thesis preparation courses. Applications for the Honors Program are available in Allan Hancock Foundation (AHF), Room 105.

Undergraduates in biological sciences have the opportunity to become involved in laboratory or field research by taking research courses for some of their elective units.

At the graduate level, the department offers challenging degree programs that lead to a Ph.D. in: biology with an option in neurobiology; integrative and evolutionary biology; marine biology and biological oceanography; molecular biology; and computational biology and bioinformatics. The department also offers an M.S. in marine and environmental biology and an M.S. in molecular genetics and biochemistry.

Honor Society

The Department of Biological Sciences offers membership in Phi Sigma, a national honor society, to selected biology majors (Alpha Alpha Chapter at USC.) Phi Sigma is devoted to the promotion of research and academic excellence in the biological sciences. Students with a GPA above 3.0 who have interest in research and have completed core requirements for the first two years in biological sciences are eligible. Major activities range from presentation of papers by members and lectures by outside speakers to field trips, laboratory demonstrations and joint research projects. The adviser is Professor John Petruska, Ph.D., RRI 119B, (213) 740-5189.

Catalina Semester

The Biological Sciences Department in conjunction with the USC Wrigley Institute for Environmental Studies (WIES) sponsors two, semester-long programs at USC's Phillip K. Wrigley Marine Sciences Center (WMSC) on Santa Catalina Island. Each of the semesters consists of a 16 unit program with three upper-division lab courses

and a special 4-unit independent research course (BISC490).

The spring program is focused on population biology and animal physiology, and the fall semester on microbial ecology and the interactions of microbes and the global environment. The program is open to all biology majors as well as students in other departments and other institutions with a strong biology background. Students are primarily in their junior or senior years and may participate in either or both semesters.

All the courses are taught by USC faculty and supported by USC graduate student teaching assistants. The classes are specialized to take advantage of the unique facilities and setting of Santa Catalina Island.

Students live on Catalina Island for the entire semester. Rates for room and board at the USC Wrigley Marine Science Center are comparable to those on campus. The program follows the same calendar schedule as the University Park Campus. For those wishing to return to the mainland on the weekend — free transportation is provided each Friday to leave and each Monday to return.

For more information, students should contact Dr. Linda Duguay, program coordinator, AHF 209F, duguay@usc.edu or catsem@usc.edu or Joqueeta Holmes, program assistant, jlholmes@usc.edu or (213) 740-6780 in the Wrigley Offices on the fourth floor of AHF. Additional information can also be found at wrigley.usc.edu/spotlight/catalina_semester.html.

Undergraduate Degrees

Advisement

Advisement in the Department of Biological Sciences is required each semester. First semester freshman and transfer advisement takes place during orientation. Advisement in all remaining semesters takes place during the pre-registration period. The undergraduate coordinator forwards advisement appointment information each semester to all students in biological sciences and biochemistry.

Pre-Medical and Other Pre-Professional Preparation

The department offers specially planned courses within the biological sciences to prepare students for admission to professional schools (medicine, dentistry, veterinary science, occupational therapy, physical therapy, pharmacy, optometry, public health), paramedical sciences (medical technology, physician's assistant, clinical and public health microbiology, clinical biochemistry), naturalist and environmental positions in the public and private sectors, jobs in industry (biotechnology), and graduate study (basic biological and biomedical fields). With the proper selection of courses under the guidance of the Department of Biological Sciences and the USC Rossier School of Education, the B.S. degree satisfies the California requirements for secondary school teaching in the life sciences.

Bachelor of Science in Biological Sciences

The general education, writing, language and diversity requirements for a USC Dornsife College of Letters, Arts and Sciences degree are applicable.

MAJOR CORE COURSES, LOWER-DIVISION **UNITS**

BISC 120L	General Biology: Organismal Biology and Evolution, or	
BISC 121L	Advanced General Biology: Organismal Biology and Evolution	4
BISC 220L	General Biology: Cell Biology and Physiology, or	
BISC 221L	Advanced General Biology: Cell Biology and Physiology	4

MAJOR CORE COURSES, UPPER-DIVISION **UNITS**

BISC 320L	Molecular Biology	4
BISC 325	Genetics	4
BISC 330L	Biochemistry	4

COLLATERAL SCIENCES CORE COURSES **UNITS**

CHEM 105aLbL	General Chemistry, or	
CHEM 115aLbL	Advanced General Chemistry	4-4
CHEM 322abL	Organic Chemistry, or	
CHEM 325abL	Organic Chemistry	4-4
MATH 125	Calculus I	4
MATH 208x	Elementary Probability and Statistics, or	
BISC 305	Introduction to Statistics for Biologists	4
PHYS 135abL	Physics for the Life Sciences (4-4), or	
PHYS 151L	Fundamentals of Physics I: Mechanics and Thermodynamics, and	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4

Upper-division Major Requirements

Twenty units of upper-division BISC course work available for major credit are required. At least two courses in the upper-division electives must carry a lab ("L") or be 490. No more than 4 units of BISC 490x may be used to fulfill the upper-division elective requirement. In addition, no more than two seminars (BISC 460 to BISC 462), totaling 4 units, may be applied to the upper-division elective requirement.

Total required units: 128

Free elective units: 12-16

Scholarship in Major Subject

The department requires that students receive a grade no lower than C- in their five core courses. They must maintain a 2.0 GPA in the upper-division biology and chemistry courses required for the major, as well as an overall 2.0 GPA. All major core courses must be taken on a letter grade basis.

Bachelor of Arts in Biological Sciences

The general education, writing, language and diversity requirements for a USC Dornsife College of Letters, Arts and Sciences degree are applicable.

MAJOR CORE COURSES, LOWER-DIVISION **UNITS**

BISC 120L	General Biology: Organismal Biology and Evolution, or	
BISC 121L	Advanced General Biology: Organismal Biology and Evolution	4

BISC 220L	General Biology: Cell Biology and Physiology, or	
BISC 221L	Advanced General Biology: Cell Biology and Physiology	4

MAJOR CORE COURSES, UPPER-DIVISION **UNITS**

BISC 320L	Molecular Biology	4
BISC 325	Genetics	4
BISC 330L	Biochemistry	4

COLLATERAL SCIENCES CORE COURSES, LOWER-DIVISION **UNITS**

CHEM 105aLbL	General Chemistry, or	
CHEM 115aLbL	Advanced General Chemistry	4-4
MATH 125	Calculus I	4
PHYS 135abL	Physics for the Life Sciences (4-4), or	
PHYS 151L	Fundamentals of Physics I: Mechanics and Thermodynamics, and	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4

COLLATERAL SCIENCES CORE COURSES, UPPER-DIVISION **UNITS**

CHEM 322abL	Organic Chemistry, or	
CHEM 325abL	Organic Chemistry	4-4

Upper-division Major Courses

Eight units of upper-division BISC course work available for major credit are required. No more than 4 units of BISC 490x may be used to fulfill the upper-division elective requirement. In addition, no more than two seminars (BISC 460 to BISC 462), totaling 4 units, may be applied to the upper-division elective requirement.

It is expected that students will take 100-level BISC core courses during the first year, two 300-level BISC core courses during the second year, and the remaining core courses and the 300- or 400-level BISC major elective courses during the third and fourth years.

Total required units: 128

Free elective units: 24

Scholarship in Major Subject

The department requires that students receive a grade no lower than C- in their five core courses. They must maintain a 2.0 GPA in the upper-division biology and chemistry courses required for the major, as well as an overall 2.0 GPA. All major core courses must be taken on a letter grade basis.

Honors Program in Biological Sciences

The department offers an honors program to outstanding students already pursuing studies for the B.A. or B.S. degree in Biological Sciences. This program offers students an opportunity to participate in undergraduate research, experience in writing an honors thesis summarizing the completed research, and experience in an honors seminar. Honors students are required to take two semesters of BISC 493x Honors Seminar (1 unit/semester) and one semester of BISC 494x Honors Thesis (2 units) in addition to fulfilling all requirements of the B.A. or B.S. degree. Honors students must also choose BISC 490x as one of their upper division electives. This program leads to the designation on the

transcript of Bachelor of Arts or Bachelor of Science in Biological Sciences with Honors.

Honors Admission Requirements

Students may apply to the department for admission to the honors program after having completed at least one year of work at USC with a minimum GPA of 3.5 in all science and math courses required for the major.

Honors Scholarship Requirements

For continuation in the honors programs, students must maintain a minimum GPA of 3.5 in the sciences and mathematics courses required for the major.

Bachelor of Science in Human Biology

The general education, writing, language and diversity requirements for a USC Dornsife College of Letters, Arts and Sciences degree are applicable.

Summary of Requirements

General core: 24 units; major electives: one thematic module of 20 units; restrictive electives: 16 units; total requirements: 60 units.

GENERAL CORE (24 UNITS) **UNITS**

BISC 120L	General Biology: Organismal Biology and Evolution, or	
BISC 121L	Advanced General Biology: Organismal Biology and Evolution	4
BISC 220L	General Biology: Cell Biology and Physiology, or	
BISC 221L	Advanced General Biology: Cell Biology and Physiology	4
CHEM 105abL	General Chemistry, or	
CHEM 115abL	Advanced General Chemistry	4-4
MATH 108*	Precalculus, or	
MATH 125*	Calculus I	4
PHYS 135aL	Physics for the Life Sciences	4

MAJOR TRACK (20 UNITS) **UNITS**

Choose one complete track module from below:

Applied Physiology

EXSC 300L	Physiology of Exercise	4
EXSC 301L	Human Anatomy	4
EXSC 400L	Principles of Perceptual-Motor Learning	4
EXSC 405L*	Applied Systems Physiology	4
EXSC 408L*	Biomechanics	4

Biomedical Science

BISC 307L*	General Physiology	4
BISC 320L*	Molecular Biology	4
BISC 421*	Neurobiology	4
EXSC 301L	Human Anatomy	4
EXSC 406L*	Exercise and Energy Homeostasis	4

Nutrition and Metabolism

BISC 307L*	General Physiology	4
BISC 330L*	Biochemistry	4
EXSC 200L*	Nutrition: Macronutrients and Energy Metabolism	4

EXSC 350*	Nutrition: Micronutrients and Homeostasis	4	Summary of Requirements Students must complete the general core consisting of 20 units. In addition, they must select 16 units from one of the three track modules below, as well as 8 additional units from either of the other track modules or the restricted electives list. Total requirements: 44 units including at least 20 upper-division.	EXSC 400L	Principles of Perceptual-Motor Learning	4		
EXSC 406L*	Exercise and Energy Homeostasis	4		EXSC 401L*	Kinesiology	4		
				EXSC 439L	Human Performance and Bioenergetics	4		
<i>Human Evolutionary Biology</i>								
ANTH 200L	The Origins of Humanity	4		RESTRICTED ELECTIVES (8 UNITS)	UNITS			
ANTH 300	Evolution, Ecology, and Culture	4	GENERAL CORE (20 UNITS)	ANTH 405	Evolutionary Medicine	4		
ANTH 306	Primate Social Behavior	4	ANTH 200L	The Origins of Humanity				
ANTH 406	Theory and Method in Biological Anthropology	4	BISC 120L	General Biology: Organismal Biology and Evolution, or	BISC 305	Introduction to Statistics for Biologists	4	
BISC 313L*	Evolution and Population Genetics	4	BISC 121L	Advanced General Biology: Organismal Biology and Evolution	BISC 307L*	General Physiology	4	
					BISC 313L*	Evolution and Population Genetics	4	
					BISC 325*	Genetics	4	
					BISC 371L*	Molecular Approaches to the Diversity of Life	4	
RESTRICTED ELECTIVES (16 UNITS)	UNITS		BISC 220L	General Biology: Cell Biology and Physiology, or	BISC 403*	Advanced Molecular Biology	4	
A minimum of 16 units is required. Courses can be selected from the elective list below or from any other track in the major.			BISC 221L	Advanced General Biology: Cell Biology and Physiology	BISC 405L*	General Embryology	4	
ANTH 308	Origins and Evolution of Human Behavior	4	EXSC 301L	Human Anatomy	BISC 410*	Applications of Molecular Biology to Medicine	4	
ANTH 405	Evolutionary Medicine	4	MATH 108*	Precalculus	BISC 411	Advanced Cell Biology	4	
BISC 305	Introduction to Statistics for Biologists	4		MAJOR TRACK (24 UNITS)	BISC 421*	Neurobiology	4	
BISC 325*	Genetics	4	Choose 16 units from one of the track modules and 8 additional units from the other track modules or restricted electives list for a total of 24 units. No more than two courses may be lower-division (100- or 200-level).			BISC 423*	Epilepsy to Ecstasy: Biological Basis of Neurological Disorders	4
BISC 371L*	Molecular Approaches to the Diversity of Life	4	<i>Human Biology (16 units)</i>			BISC 424*	Brain Architecture	4
BISC 403*	Advanced Molecular Biology	4	BISC 307L*	General Physiology	4	BISC 426*	Principles of Neural Development	4
BISC 405L*	General Embryology	4	BISC 320L*	Molecular Biology	4	BISC 435*	Advanced Biochemistry	4
BISC 410*	Applications of Molecular Biology to Medicine	4	BISC 421*	Neurobiology	4	BISC 450L*	Principles of Immunology	4
BISC 411*	Advanced Cell Biology	4	EXSC 200L*	Nutrition: Macronutrients and Energy Metabolism	4	BISC 480	Developmental Biology	4
BISC 421*	Neurobiology	4	EXSC 350*	Nutrition: Micronutrients and Homeostasis	4	BISC 490x	Directed Research	4
BISC 423*	Epilepsy to Ecstasy: Biological Basis of Neurological Disorders	4	EXSC 405L*	Applied Systems Physiology	4	CHEM 322abL*	Organic Chemistry	4-4
BISC 424*	Brain Architecture	4	EXSC 406L*	Exercise and Energy Homeostasis	4	CHEM 325abL*	Organic Chemistry	4-4
BISC 426*	Principles of Neural Development	4	EXSC 408L*	Biomechanics	4	CHEM 432*	Physical Chemistry for the Life Sciences	4
BISC 435*	Advanced Biochemistry	4				EXSC 409	Metabolic Diseases	4
BISC 450L*	Principles of Immunology	4	<i>Human Evolutionary Biology (16 units)</i>			EXSC 441L*	Prevention of Athletic Injuries	4
BISC 490x	Directed Research	4	ANTH 300	Evolution, Ecology, and Culture	4	EXSC 442L*	Advanced Prevention and Care of Athletic Injuries	4
CHEM 322abL*	Organic Chemistry	4-4	ANTH 306	Primate Social Behavior	4	GERO 310*	Physiology of Aging	4
CHEM 325abL*	Organic Chemistry	4-4	ANTH 308	Origins and Evolution of Human Behavior	4	GERO 411L	Physiology, Nutrition, and Aging	4
CHEM 432*	Physical Chemistry for the Life Sciences	4	ANTH 406	Theory and Method in Biological Anthropology	4	GERO 414*	Neurobiology of Aging	4
EXSC 409	Metabolic Diseases	4	BISC 313L*	Evolution and Population Genetics	4	GERO 440*	Biodemography of Aging	4
EXSC 439L	Human Performance and Bioenergetics	4	BISC 371L*	Molecular Approaches to the Diversity of Life	4	MATH 125*	Calculus I	4
GERO 310*	Physiology of Aging	4	GERO 440*	Biodemography of Aging	4	MATH 126*	Calculus II	4
GERO 411L	Physiology, Nutrition, and Aging	4	PSYC 401*	Evolutionary Psychology	4	PSYC 274L	Statistics I	4
GERO 414*	Neurobiology of Aging	4				PSYC 320*	Principles of Psychobiology	4
GERO 440*	Biodemography of Aging	4	<i>Human Performance (16 units)</i>			PSYC 326*	Behavioral Neuroscience	4
MATH 126*	Calculus II	4	EXSC 202L	Principles of Nutrition and Exercise	2	PSYC 425*	Functional Imaging of the Human Brain	4
PHYS 135bL	Physics for the Life Sciences	4	EXSC 203L	Individualized Exercise Prescription	2	Bachelor of Science in Biochemistry		
PSYC 274L	Statistics I	4	EXSC 250	Drugs and Ergogenetic Aids in Sport and Weight Control	4	This degree is offered jointly by the Departments of Biological Sciences and Chemistry.		
PSYC 320*	Principles of Psychobiology	4	EXSC 300L	Physiology of Exercise	4	The general education, writing, foreign language and diversity requirements for a degree in the USC Dornsife College of Letters, Arts and Sciences are applicable.		
PSYC 326*	Behavioral Neuroscience	4	EXSC 310	Sociopsychological Aspects of Sport and Physical Activity	4	Students must complete each required course in the Departments of Biological Sciences and Chemistry with a grade of C- or better, and maintain an overall GPA of 2.0 or better in all attempted courses in the two departments in the regular degree program.		
PSYC 425*	Functional Imaging of the Human Brain	4						
<i>*Prerequisite required</i>								
Bachelor of Arts in Human Biology								
The general education, writing, language and diversity requirements for a USC Dornsife College of Letters, Arts and Sciences degree are applicable.								

REQUIRED COURSES		UNITS
BISC 120L	General Biology: Organismal Biology and Evolution, or	
BISC 121L	Advanced General Biology: Organismal Biology and Evolution	4
BISC 220L	General Biology: Cell Biology and Physiology, or	
BISC 221L	Advanced General Biology: Cell Biology and Physiology	4
BISC 320L	Molecular Biology	4
BISC 330L	Biochemistry	4
BISC 403	Advanced Molecular Biology	4
BISC 435	Advanced Biochemistry	4
CHEM 105aLbL	General Chemistry, or	
CHEM 115aLbL	Advanced General Chemistry	4-4
CHEM 300L	Analytical Chemistry	4
CHEM 322aLbL	Organic Chemistry, or	
CHEM 325aLbL	Organic Chemistry	4-4
CHEM 430a	Physical Chemistry, or	
CHEM 432	Physical Chemistry for the Life Sciences	4
MATH 125	Calculus I	4
MATH 126	Calculus II	4
BISC 305	Introduction to Statistics for Biologists, or	
MATH 208x	Elementary Probability and Statistics, or	
MATH 226	Calculus III	4
PHYS 135aLbL	Physics for the Life Sciences, or	
PHYS 151L	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4

Eight units of upper-division, non-core course work available for major credit in biological sciences or chemistry are required. Students enrolled in BISC 490 are limited to 4 units, while students enrolled in CHEM 490 may complete up to 8 units. No more than two seminars (BISC 460 to BISC 462), totaling 4 units, may be applied to the upper-division elective requirement.

Honors Program in Biochemistry

A B.S. degree with honors in biochemistry is available for eligible students. In meeting program requirements students must submit an application and satisfy the objectives of one of the program options noted below.

Option One: Biochemistry Honors with Chemistry Research

Students seeking admission into option one must have at least junior standing (64 units) with an overall USC GPA of 3.5 or better in at least 32 units at USC, and have a 3.5 or better in at least 16 units in biological sciences and chemistry. Students in this option must complete 8 units of research (CHEM 490) under the supervision of chemistry faculty with the results of research being described in an undergraduate thesis reviewed and approved by a faculty committee. To graduate with honors under this option students must earn a GPA of 3.5 in all biological sciences and chemistry courses required for the major.

Option Two: Biochemistry Honors with Biology Research

Students seeking admission into option two must have at least sophomore standing (32 units) with an overall USC GPA of 3.5 or better both cumulatively and in 16 units in biological sciences and chemistry. Students in this option must complete 4 units of research (BISC 490) under faculty in biological sciences or under faculty in any other department approved by biological sciences. In addition, students must complete two semesters of Honors Seminar (BISC 493), 1 unit each, and one semester of Honors Thesis (BISC 494), 2 units. To graduate with honors under this option students must earn a GPA of 3.5 in all sciences and mathematics courses required for the major.

Upon graduation, transcripts of students following either option will be noted, "Bachelor of Science with Departmental Honors."

Minor in Biotechnology

The USC Dornsife College of Letters, Arts and Sciences Departments of Biological Sciences and Chemistry and the Marshall School of Business jointly offer the cross-departmental minor in biotechnology. This minor brings essential knowledge in the basic sciences together with the corporate skills needed in a rapidly growing industry. The minor is especially well suited for the business, biological sciences, chemistry or engineering student seeking a career in business and/or the biomedical/bio-technical sciences.

This minor requires a varying number of units beyond major requirements depending upon the student's major program of study: biological sciences (B.A. or B.S.), 16–18 additional units; business (B.S.), 28 additional units; chemistry (B.A. or B.S.), 32–34 additional units.

Students in other majors may be required to complete up to 46 units for the minor depending on whether their major includes any of the minor requirements and their prerequisites.

Please see a biological sciences or business adviser for specific program requirements.

REQUIRED COURSES		UNITS
<i>Biological Sciences (16 units)</i>		
BISC 220L	General Biology: Cell Biology and Physiology, or	
BISC 221L	Advanced General Biology: Cell Biology and Physiology	4
BISC 320L	Molecular Biology	4
BISC 330L	Biochemistry	4
BISC 406L	Biotechnology	4

Recommended: BISC 300L, BISC 403, BISC 450L

Chemistry (12 units)

CHEM 105aLbL	General Chemistry	4-4
CHEM 322aL	Organic Chemistry	4

Recommended: CHEM 322bL, CHE 489

Finance, Business, and Accounting* (16–18 units)

ACCT 410x	Accounting for Non-Business Majors, or	4
BUAD 285ab	Accounting Fundamentals, Financial and Managerial Accounting, or	4-2
BUAD 286ab	Accounting Fundamentals, Managerial and Financial Accounting, or	4-2
BUAD 305	Abridged Core Concepts of Accounting Information	4-6
BUAD 215x	Foundations of Business Finance, or	
BUAD 306	Business Finance	4
BUAD 304	Leading Organizations, or	
BUAD 307	Marketing Fundamentals	4
FBE 403	Introduction to the Legal Environment of Business	4

*Students pursuing the business degree must enroll in BUAD 285ab or BUAD 286ab and BUAD 306.

Recommended: MATH 118x or MATH 125 and MATH 208x or MATH 218

Minor in Computational Biology and Bioinformatics

The USC Dornsife College of Letters, Arts and Sciences departments of biological sciences and mathematics and the Viterbi School of Engineering departments of computer science and biomedical engineering jointly offer the cross-departmental minor in computational biology and bioinformatics. This minor provides essential training in using quantitative skills to solve fundamental biological problems as well as problems related to public health, neuroscience and environment. The minor includes four tracks according to the background of the students in biology, mathematics, computer science and engineering.

As with all minors, students must include at least four upper-division courses (16 units) and four courses (16 units) dedicated exclusively to this minor (they can overlap). Four courses (16 units) taken outside the major department are required. The courses are designed for students in biology, mathematics, computer science or biomedical engineering. Other students may need more units to receive the minor. The CHEM 105bL or CHEM 115bL prerequisite for BISC 320 may be waived if the students have the necessary background determined by the faculty adviser for the minor. Students who waive these prerequisites cannot retake CHEM 105bL or CHEM 115bL for credit.

Please see the minor adviser for specific program requirements.

REQUIRED COURSES		UNITS
<i>Biological Sciences:</i>		
BISC 305	Introduction to Statistics for Biologists (Can be substituted by MATH 208 or MATH 408 or BME 423)	4
BISC 320L	Molecular Biology	4
BISC 478	Computational Genome Analysis	4
BISC 481	Structural Bioinformatics: From Atoms to Cells	4

Mathematics:

MATH 125*	Calculus I	4
MATH 126*	Calculus II	4

Computer Science:

CSCI 103	Introduction to Programming	3
CSCI 104	Data Structures and Object-Oriented Design	4

Electives:

Biological Sciences: BISC 230L, BISC 300L*, BISC 313*, BISC 325*, BISC 330L*, BISC 403*, BISC 406L*, BISC 410*

Mathematics: MATH 225*, MATH 226*, MATH 408*, MATH 432*, MATH 458*, MATH 465*, MATH 466*, MATH 467*

Computer Science: CSCI 201L*, CSCI 170, CSCI 270, CSCI 477a*, CSCI 477b*, CSCI 485*

*Prerequisite required

Total requirements for students with no prior course work: 30 units. Students need to take 30 units of the courses listed: all requirements, and enough electives to add up to 30 units, while fulfilling the requirement that they must take 16 units unique to the minor (not used for their major or general education) and 16 units not offered by their major.

Students majoring in biological sciences, mathematics, computer science and biomedical engineering can meet many of these requirements with course work that also satisfies their majors.

Students of other majors need to take all the required courses plus at least one elective from mathematics or computer science (e.g., MATH 226, MATH 407, CSCI 201) from the list of elective courses to meet the minor requirements.

Minor in Craniofacial and Dental Technology

For a complete listing of course requirements, see the Ostrow School of Dentistry, page 529xx.

Minor in Natural Science

The minor in natural science will first provide students with a foundation in the basic sciences of physics, chemistry and biology. Each student will then build on this by selecting a variety of electives to meet individual scientific interests and academic goals. Eighteen units toward the natural science minor must be completed at USC. This minor is not available to majors in the natural sciences or engineering.

REQUIRED COURSES (22 UNITS)		UNITS
Any five courses from among:		
BISC 120L	General Biology: Organismal Biology and Evolution, or	4
BISC 121L	Advanced General Biology: Organismal Biology and Evolution	
BISC 220L	General Biology: Cell Biology and Physiology, or	4
BISC 221L	Advanced General Biology: Cell Biology and Physiology	
CHEM 105aL	General Chemistry, or	4
CHEM 115aL	Advanced General Chemistry	
CHEM 105bL	General Chemistry, or	4
CHEM 115bL	Advanced General Chemistry	

PHYS 135aL	Physics for the Life Sciences	4
PHYS 135bL	Physics for the Life Sciences	4

And a capstone course:

BISC 321x	Science, Technology and Society	2
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Elective Course Requirement (8 units)

Any two courses chosen from among those offered for major credit by the departments of chemistry, physics, biological sciences, earth sciences and kinesiology.

Graduate Degrees**Degree Programs in Biological Sciences**

The graduate programs in biology provide education and training of biologists interested in living systems ranging from cellular to ecosystem levels of organization, investigated by laboratory or fieldwork. Courses and faculty research interests allow a multidisciplinary approach. A number of additional research areas are provided by adjunct faculty from other institutions, including the Los Angeles County Museum of Natural History, Childrens Hospital Los Angeles and the House Ear Institute. Students develop the ability to formulate and test hypotheses, integrating information and concepts in the completion of a dissertation (Ph.D.). A qualifying exam committee is formed for each student during the first year to develop a particular program of course work and research, and to evaluate the student's progress. Specific information about the options in biological sciences can be obtained by requesting information brochures or online at dornsife.usc.edu/bisc.

Admission Requirements

Applicants must have a bachelor's degree in a natural science (preferably biology) from an accredited four year college or university, or in mathematics or engineering; required background courses include organic chemistry, general physics and mathematics through integral calculus. Applicants are evaluated by their transcripts and GPA; scores on the GRE General Test; three letters of recommendation; and a statement of interest. A faculty member must serve as initial sponsor and adviser for admission to marine biology and biological oceanography (MBBO) and integrative and evolutionary biology (IEB); neurobiology (BNRO), and molecular and computational biology (MCB) students are required to complete at least two laboratory rotations in their first year. Applicants who are accepted but judged to have minor deficiencies are expected to correct them within the first year.

Degree Requirements

These degrees are awarded under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of the catalogue (page 97xx) for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School.

Master of Science in Biology

The M.S. degree program in biology is a terminal degree for students admitted into the marine biology and biological oceanography (MBBO), neurobiology (BNRO), or integrative and evolutionary biology (IEB)

Ph.D. programs who cannot complete the Ph.D. degree program for personal or medical reasons.

The M.S. degree program is a non-thesis program but a paper, based on the student's original research investigation of a selected program in biology, constitutes one of the requirements. Each student must take 7-8 units of biology graduate core courses (BISC 582, BISC 584 and BISC 585) or neurobiology courses (NEUR 524 and either NEUR 531 or NEUR 532), two seminars and additional graduate courses or research units for a minimum of 24 units. Students also must satisfy the residency and other requirements of the Graduate School. Further details of these requirements are contained within each graduate program's particular requirements and policies.

Master of Science in Marine and Environmental Biology

The Master of Science degree in Marine and Environmental Biology (MEB) is designed to provide admitted students with a rigorous, quantitative and focused introduction to the burgeoning fields and breadth of topics in marine environmental biology/chemistry, geobiology, oceanography, conservation biology and population dynamics (depending upon the concentration selected). MEB provides students with independent research experiences that satisfy their own specific interests. The program is intended to position and stimulate students for possible advanced study leading to a Ph.D. in one of the areas stated above, and/or provide a unique facet to the background of a prospective medical student. The program will also provide fundamental tools and expertise for entry into a master's level position in academic, government or private sector research laboratories. It will prepare students interested in governmental and non-government (NGO) environmental regulatory science and forge career pathways into private sector positions in environmental consulting and business.

Applicants must possess a cumulative and science GPA of 3.0 or higher and have the following courses completed prior to admission: one year of introductory biology, one semester of molecular biology, one semester of biochemistry, one year of general chemistry, and one year of organic chemistry. All of the above must carry labs and be available for major credit in the natural sciences at a four-year college or university.

Applicants interested in using course work completed while an undergraduate may apply for the progressive master's degree as early as their junior year.

CORE COURSES		UNITS
BISC 582	Advanced Biological Oceanography	4
BISC 585	Scientific Writing and Reviewing	2
BISC 590	Directed Research	4

Completion of two semesters of:		
BISC 529	Seminar in Marine Biology	1-1

CORE SEMINAR ELECTIVE		UNITS
Completion of one advanced seminar from among BISC 530, BISC 531, BISC 532, BISC 533, BISC 534, BISC 535, BISC 536		2

GRADUATE ELECTIVE REQUIREMENT**UNITS**

Eighteen units chosen from the following list, of which 8 units must be within the Department of Biological Sciences (BISC), and no more than 8 units can be at the 400-level.

BISC 403	Advanced Molecular Biology	4
BISC 419	Environmental Microbiology	4
BISC 431L	Aquatic Microbiology — Catalina Semester	4
BISC 435	Advanced Biochemistry	4
BISC 437L	Comparative Physiology of Animals	4
BISC 445L	Fundamentals of Vertebrate Biology	4
BISC 447L	Island Biogeography and Field Ecology	4
BISC 450L	Principles of Immunology	4
BISC 455L	Molecular Approaches to Microbial Diversity — Catalina Semester	4
BISC 457L	Methods in Marine Biology and Biological Oceanography — Catalina Semester	4
BISC 460	Seminar in Marine and Environmental Biology	2, max 4
BISC 469L	Marine Biology	4
BISC 473L	Biological Oceanography	4
BISC 474L	Ecosystem Function and Earth Systems	4
BISC 483	Geobiology and Astrobiology	4
BISC 502ab	Molecular Genetics and Biochemistry	4-4
BISC 511	Integrative Biology	4
BISC 512	Evolutionary Biology	4
BISC 530	Advanced Seminar in Plankton Biology	2
BISC 531	Advanced Seminar on the Physiology of Marine Organisms	2
BISC 532	Advanced Seminar in Molecular and Microbial Ecology	2
BISC 533	Advanced Seminar in Remote Sensing and Modeling	2
BISC 534	Advanced Seminar in Population Genetics of Marine Organisms	2
BISC 536	Advanced Seminar in Marine Biogeochemistry	2
BISC 584	Faculty Lecture Series	2
BISC 588L	Quantitative Analysis for Biological and Earth Sciences	4
CE 443	Environmental Chemistry	3
CE 463L	Water Chemistry and Analysis	3
CE 503	Microbiology for Environmental Engineers	3
CE 513L	Instrumental Methods for Environmental Analysis	3
GEOG 587	GPS/GIS Field Techniques	4
GEOL 412	Oceans, Climate, and the Environment	3
GEOL 460L	Geochemistry and Hydrogeology	3
GEOL 500	Marine Paleoecology	3
GEOL 501	Paleobiology	3

GEOL 514	Marine Geology	3
GEOL 555	Paleoceanography	3
GEOL 560	Marine Geochemistry	3
GEOL 564	Isotope Geochemistry	3
GEOL 567	Stable Isotope Geochemistry	3
GEOL 577	Micropaleontology	3
OS 512	Introduction to Chemical and Physical Oceanography	3
PPD 694	Coastal Policy and Planning	4

Total required units: 32

Doctor of Philosophy in Biology (Neurobiology)

Application deadline: December 15

Course Requirements

The neurobiology option provides each student with a broad, fundamental background in neurobiology and with detailed knowledge and expertise in the chosen area of concentration. The Ph.D. neurobiology concentration requires the following courses: two of three (NEUR 531, NEUR 532 or BISC 426) and NEUR 538 plus NEUR 539 (1 unit per semester for four semesters). A minimum total of 60 units is required, consisting of formal courses, seminars and research credit. At least 24 of the minimum 60 total units required are to be formal graduate course work (lecture or seminar courses). Courses in related disciplines of neuroscience, such as computational or cognitive neuroscience, are not required, but may be taken as electives. Courses in genomics, molecular biology, integrative and evolutionary biology and biomedical engineering are also available as electives for students interested in bridging the interface between neurobiology and these disciplines. Students also must satisfy the residency and other requirements of the Graduate School.

Student Teaching

Since most graduates in biological sciences will spend some part of their careers in academic work, teaching experience is considered an important part of graduate training. Each graduate student in the program is therefore required to serve at least one semester as a teaching assistant in the Department of Biological Sciences.

Qualifying Examination

The examinations qualifying the student for candidacy for the Ph.D. in biology (neurobiology) must be initiated before the end of the fourth semester. The first part is written and consists of comprehensive questions from the qualifying exam committee covering the student's knowledge of topics within their proposed area of research. The second part is an oral examination, which consists of the presentation and defense of a research proposal.

Doctoral Dissertation

The dissertation is based on original, publishable and significant research conducted independently by the student under the guidance of the dissertation committee.

Defense of the Dissertation

The defense of the dissertation is either a defense oral or a final oral. In most cases, a defense oral will suffice if approved by the dissertation committee.

Doctor of Philosophy in Marine Biology and Biological Oceanography

Application deadline: January 15

Course Requirements

In marine biology and biological oceanography, each student receives a general background in marine sciences and obtains in-depth specialization in a research area of his or her choosing. Each student's curriculum is fitted to the particular needs and demands of the chosen research field. The 26 units of formal course work must include the following: BISC 529 (4), BISC 582 (4), BISC 583 (4), BISC 584 (2), BISC 585 (2), BISC 586 (2); four advanced graduate seminars (8); and a statistics course approved by the student's adviser.

CORE COURSES**UNITS**

BISC 582	Advanced Biological Oceanography	4
BISC 583	Evolution and Adaptation of Marine Organisms	4
BISC 584	Faculty Lecture Series	2
BISC 585	Scientific Writing and Reviewing	2
BISC 586	Biological Oceanographic Instrumentation	2

Completion of two semesters of:

BISC 529	Seminar in Marine Biology	4
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CORE SEMINAR ELECTIVE**1, MAX 4 UNITS**

Completion of one advanced seminar from among BISC 530, BISC 531, BISC 532, BISC 533, BISC 534, BISC 535, BISC 536 and BISC 538

A minimum total of 60 units is required, consisting of formal courses, seminars and research credit. At least 24 of the minimum 60 total units required are to be formal graduate course work (lecture and seminar courses).

Screening Examination

Candidates must also pass a screening examination to determine competence and point out deficiencies, fulfill a research tool requirement (computer skills, biostatistics, quantitative chemistry), and meet the residency and other requirements of the Graduate School. This exam is completed before completion of 24 units in the program.

Student Teaching

Since most graduates in biological sciences will spend some part of their careers in academic work, teaching experience is considered an important part of graduate training. Each graduate student in the program is therefore required to serve at least two semesters as a teaching assistant in the Department of Biological Sciences.

Qualifying Examination

Before the end of the fifth semester, each student must pass a written and oral qualifying examination given by the student's qualifying exam committee. The written part involves answering a number of questions at length. The oral part is in the area of the student's intended research, based on a project selected and developed by the student into a written proposition. After

passing the qualifying examination, the student completes the research investigation and any other requirements under the guidance of the research adviser who also chairs the dissertation committee.

Doctoral Dissertation

The dissertation is based on original, publishable and significant research conducted independently by the student under the guidance of the dissertation committee.

Defense of the Dissertation

The defense of the dissertation is either a defense oral or a final oral. In most cases, a defense oral will suffice if approved by the dissertation committee.

Master of Science in Molecular Genetics and Biochemistry

The Master of Science in Molecular Genetics and Biochemistry is designed to provide outstanding students in life science majors with a rigorous, quantitative experimental experience in molecular genetics, genomics, evolutionary biology, cell and molecular biology, biochemistry (depending upon the research area selected). The program is intended to position and stimulate students for possible advanced study leading to a Ph.D. in one of the areas stated above, and/or provide an important research experience to the background of a prospective medical student. The program will also provide fundamental tools and expertise for entry into master's level positions in academic, government or private sector research laboratories, including biotech, pharmaceuticals or diagnostics. This is a terminal degree. Students who wish to pursue their doctorate at USC should apply directly to the Ph.D. program.

Applicants must be undergraduate majors in the life sciences, who possess a cumulative and science GPA of 3.0 or higher and have the following courses completed or in progress at the time of admission: one year of introductory biology (BISC 120L/BISC 220L or BISC 121L/BISC 221L, or equivalent), one semester of molecular biology (BISC 320L or equivalent), one year of general chemistry (CHEM 105abL or CHEM 115abL, or equivalent), and one year of organic chemistry (CHEM 322abL or CHEM 325abL or equivalent). All of the above must carry labs and be available for major credit in the natural sciences at a four-year college or university.

Because this degree is based on research, students must identify a faculty adviser prior to enrollment and submit a research proposal approved by that adviser to the master's degree committee. It is recommended that students have performed the equivalent of independent study or a research internship (equivalent to BISC 490x) in their laboratory of choice prior to admission. Students are expected to perform 6 units of research in both fall and spring semesters; alternatively, with the adviser's approval upon enrollment, they may choose to perform the research component in variable increments in summer, fall and spring semesters to equal 12 units. This may be the preferred schedule if students wish to take additional electives during the academic year.

This program requires 32 units, of which 24 must be at the graduate level.

CORE COURSES		UNITS
BISC 502a	Molecular Genetics and Biochemistry	4
BISC 544	Advanced Reading in Molecular Biology (two semesters)	4
BISC 590	Directed Research (2–3 semesters)	12
One from the following:		
BISC 502b	Molecular Genetics and Biochemistry	4
BISC 505	Genomics and Molecular Genetics	4

ELECTIVE REQUIREMENTS		UNITS
Eight units from the following list:		
BISC 403	Advanced Molecular Biology	4
BISC 406L	Biotechnology	4
BISC 411	Advanced Cell Biology	4
BISC 414	Biology of Cancer	4
BISC 419	Environmental Microbiology	4
BISC 425	Advanced Genetics Through the Primary Scientific Literature	4
BISC 426	Principles of Neural Development	4
BISC 435	Advanced Biochemistry	4
BISC 478	Computational Genome Analysis	4
BISC 480	Developmental Biology	4
BISC 481	Structural Bioinformatics: From Atoms to Cells	4
BISC 485	Advanced Seminar in Bacterial Survival and Evolution	4
BISC 502b	Molecular Genetics and Biochemistry (if core requirement fulfilled with BISC 505)	4
BISC 505	Genomics and Molecular Genetics (if core requirement fulfilled with BISC 502b)	4
BISC 515	Evolutionary and Human Biology	4

Students will complete a summative research paper that is written in publication format. The student will submit a proposed outline to the faculty mentor and one other molecular biology faculty member by January 15 for initial approval. The final paper is due on April 15. In the rare event that the final paper is not acceptable to the faculty, students may enroll for one more summer semester to perform revisions. If the paper is still not acceptable, the M.S. component of the degree will not be granted.

Molecular and Computational Biology

This program is designed to train the participants intensively in the concepts and experimental methodologies of molecular biology and biochemistry. The subject matter is organized in an integrated fashion (lectures, seminars and laboratory) to present fundamental information on the biochemistry, biophysics, genetics and development of cells from a variety of different organisms. Primary emphasis is on the relationship between structure and function at different integrative and

functional levels. The program offers a Ph.D. in Molecular Biology and a Ph.D. in Computational Biology and Bioinformatics. Applications may be accessed online at dornsife.usc.edu/bisc/molecular/home.

Admission Requirements

Applicants are expected to have a bachelor's degree or equivalent in a cognate area such as biology, chemistry, physics, engineering, bacteriology, computer science, or bioinformatics. Undergraduate work should include a basic course in biology, basic physics, physical chemistry, organic chemistry, biochemistry and calculus. Students who are deficient in any of these may be required to correct the deficiency during the first two years of graduate study. Courses taken to correct these deficiencies are usually not credited toward the degree. The student must submit letters of recommendation from at least three faculty members who can evaluate the promise of the student for graduate work and independent research. The applicant must take the GRE General Test prior to acceptance.

Degree Requirements

These degrees are awarded under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue (page 97xx) for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School.

Master of Science in Molecular and Computational Biology

The M.S. degree program in molecular and computational biology (MCB) is a terminal degree for students admitted into the MCB Ph.D. program who cannot complete the Ph.D. degree program for personal or medical reasons. The study of molecular biology places so many demands upon the student that it is difficult to attain any satisfactory level of competence in the time generally taken for a master's degree. Therefore, enrollment of graduate students as master's degree applicants is not encouraged and is reserved for special circumstances. The curriculum of the master's student is patterned after that of the doctorate up to and including the qualifying examination, but not including thesis research. The qualifying examination will serve as the comprehensive master's examination.

Doctor of Philosophy in Molecular Biology

Application deadline: January 1

During the first year, the student's program is under the direction of an initial qualifying exam committee composed of members of the committee on admissions to the program. Before the end of the second semester, a permanent qualifying exam committee, chaired by the student's research director, is established. Thereafter, the student's program of studies and dissertation is under the direction of the permanent qualifying exam committee and the dissertation committee.

Screening Procedure

In the third semester, the student's progress is discussed and evaluated by the qualifying exam committee. The purpose of this evaluation is to determine competence to continue graduate study, and to point

out deficiencies to be remedied prior to the qualifying examination.

Course Requirements

A minimum of 24 of the 60 units required for the Ph.D. degree must be in formal course work, exclusive of research. These must include the core courses, BISC 502a and BISC 502b, to be completed in the first year with a grade no less than B in both classes. Additionally, students will register for BISC 576 in the fall semester and BISC 504L (3-3) in both semesters. In the fall semester of the second year, students will choose an additional 4-unit, 400- or 500-level course in consultation with their adviser. Students must participate in molecular biology seminars. Other courses may be chosen, in consultation with the program chair, from graduate offerings of this and other departments.

Language Requirement

Students in the graduate program in molecular biology are not required to pass a foreign language examination.

Qualifying Examination

The examinations qualifying the student for candidacy for the Ph.D. in molecular biology must be initiated in the second semester of the second year. The first part is written and consists of comprehensive questions covering the student's knowledge of prokaryotic and eukaryotic molecular biology and developmental biology or genomics. The second part is an oral examination. It consists of general questions and the presentation and defense of a proposition outlining a research program. The student can pick a topic completely outside of their thesis topic. Alternatively, the student can pick a topic using the same model system as their thesis work, but a different research question, or a topic on the same research question, but using a different model system. While going outside their field is encouraged, students should not stray too far away from genetics, molecular and cell biology or biochemistry approaches. This examination sequence must be completed by the end of the fifth semester of the program.

Doctoral Dissertation

The dissertation is based on original, publishable, and significant research conducted independently by the student under the guidance of the dissertation committee.

Defense of the Dissertation

The defense of the dissertation is either a defense oral or a final oral. In most cases a defense oral will suffice if approved by the dissertation committee.

Student Teaching

Since most graduates in biological sciences will spend some part of their careers in academic work, teaching experience is considered an important part of graduate training. Each graduate student in the program is therefore required to assist in the teaching program of the Department of Biological Sciences.

Doctor of Philosophy in Computational Biology and Bioinformatics

Application deadline: December 15

During the first year, the student's program is under the direction of an initial qualifying exam committee composed of members of the admissions committee. After passing the screening procedure before the end of the first semester, the student must form a qualifying exam committee consisting of an adviser and four other faculty members, including at least one from another department. Thereafter, the student's program of studies and dissertation are under the direction of the permanent qualifying exam committee and the dissertation committee.

Screening Procedure

The screening examination should be taken by the end of the second semester in the program. If the student fails the examination, the department, at its discretion, may permit the student to take it again during the next semester. The screening examination consists of written examinations on topics including molecular biology, mathematical probability and statistics, and algorithms.

Course Requirements

The students must complete, with no grade lower than a B, a minimum of 60 units of courses carrying graduate credit and approved by the qualifying exam committee. The required courses include: BISC 542, CSCI 570, MATH 505a, MATH 541a, and MATH 578ab. Students must take at least one biology course in the area of molecular biology, genetics or biochemistry. An additional 6 units of elective courses will be taken in consultation with the student's adviser. Students must register for a minimum of 4 units of dissertation research (BISC 794ab). Students must be registered in BISC 542 (computational section) their first three years in the program (6 semesters).

Transfer of Credit

No transfer of credit will be considered until the screening examination is passed. A maximum of 30 units of graduate work at another institution may be applied toward the course requirements for the Ph.D. A grade of B- (A = 4.0) or lower will not be accepted and, at most, two grades of B will be accepted. A Ph.D. candidate may petition the department for transfer of additional credit, after he or she passes the qualifying examination.

Qualifying Examination

The qualifying examination should be taken within two semesters following successful completion of the screening examination.

The written portion of the qualifying examination consists of a dissertation proposal. This document should include: introduction, statement of the problem, literature survey, methodology, summary of preliminary results, proposed research, references, appendix (including one or two fundamental references).

The oral portion of the qualifying examination consists of presentation of the Ph.D. dissertation proposal. The student must demonstrate research potential.

Dissertation

Following passage of the screening examination and approval of a dissertation topic by the qualifying exam committee, the student begins research toward the dissertation under the supervision of the dissertation committee. The primary requirement of the Ph.D. is an acceptable dissertation based on a substantial amount of original research conducted by the student.

Doctor of Philosophy in Integrative and Evolutionary Biology

Application deadline: December 15

This program of study is designed to provide each student with a broad, fundamental background in integrative and evolutionary biology (IEB) coupled with detailed knowledge and expertise in the chosen area of concentration. The core of the course work in integrative and evolutionary biology consists of four courses — BISC 515 (4), seminar BISC 549 (2-2) and a 4-unit course to be decided upon by the student's adviser — that are taken by all first-year graduate students. Various faculty members also teach a variety of advanced courses and seminars on specialized research topics each semester. In addition, a range of courses in areas relating to IEB are available in various departments on the University Park and Health Sciences Campuses.

Course Requirements

Each student's curriculum is tailored to the particular interests of the individual and the needs and demands of the chosen research field. A minimum total of 60 units is required, consisting of formal courses, seminars and research credit. The 24 units of formal course work must include 12 units of specified course work in integrative and evolutionary biology, BISC 515, adviser-specified course, seminar BISC 549 (minimum 4 units), and 12 units of advanced electives chosen in consultation with the student's adviser.

Screening Examination

After completion of the core integrative biology and evolutionary biology course work (BISC 515, adviser-specified, BISC 549) during the first year, the student's degree progress is discussed and evaluated by a screening committee composed of members of the IEB faculty as well as the student's principal adviser. The purpose of this written and oral evaluation is to determine competence to continue graduate study and identify areas to be strengthened prior to the qualifying examination.

Qualifying Examination

By the end of the third semester, students should choose a qualifying exam committee consistent with the requirements of the graduate school composed of IEB faculty and one outside member. This committee will conduct the qualifying exam and provide guidance during dissertation research. The chair of the committee will serve as the principal adviser. Students should consult extensively with each committee member regarding subjects to be covered in the exam.

The qualifying exam consists of written and oral parts. Both parts must be finished before the end of the fifth semester. For the written exam, the adviser will consult with each of the members of the qualifying exam

committee. The written part will incorporate evaluation and synthesis of existing knowledge related to topic areas, design of experiment to test a relevant hypothesis, and interpretation of anticipated results. The oral exam consists of an oral defense of the written part and will be conducted within a month of the written part of the qualifying exam.

Doctoral Dissertation

The dissertation is based on original, publishable and significant research conducted independently by the student under the guidance of the dissertation committee.

Courses of Instruction

BIOLOGICAL SCIENCES (BISC)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

BISC 101Lxg Cellular and Molecular Biology (4, FaSp) Cellular and molecular biology with examples related to human biology and diseases. Fundamental life processes examined at the genetic, cellular and molecular levels. Not available for major credit.

BISC 102Lxg Humans and Their Environment (4, FaSp) An examination of the physical and biological laws that influence agriculture, pollution, population dynamics (including humans), climate, biodiversity and ecosystem structure and function. Not available for major credit.

BISC 103Lx General Biology for the Environment and Life (4) Study of common skills in biology, including basics of evolution, systematics, ecology, genetics, biochemistry and molecular biology, physiology, and anatomy. Not for major credit for biological sciences majors.

BISC 104Lxg How the Body Works: Topics in Human Physiology (4, Fa) Structure and function of the human body, including the role of organ systems, tissues, and cells in normal function. Malfunctions relating to disease, substance abuse and lifestyle. Not available for major credit.

BISC 108L Special Laboratory I (1) Laboratory component for BISC 120 for entering freshmen or transfer students with advanced placement or equivalent lecture credit from another institution.

BISC 109L Special Laboratory II (1) Laboratory component for BISC 220 for entering freshmen or transfer students with advanced placement or equivalent lecture credit from another institution.

BISC 120Lg General Biology: Organismal Biology and Evolution (4, Fa) In-depth survey of key topics related to advances in our knowledge of the diversity of life and evolution; origin of life; eukaryotes/prokaryotes; ecology. (Duplicates credit in BISC 112L, BISC 113L, and BISC 121L.)

BISC 121Lg Advanced General Biology: Organismal Biology and Evolution (4, Fa) Equivalent to 120L, but taught at a higher level for exceptionally well-prepared students. Admission to the course by departmental approval only. (Duplicates credit in BISC 112L, BISC 113L, and BISC 120L.) *Corequisite*: CHEM 115aL.

BISC 140 Human Impact on the Ocean Planet (4) Overview of marine biodiversity and human influence on marine biota; eutrophication in bays and estuaries; global movement of invasive species, harmful algal blooms, fishing activities and sewage/chemical pollution.

BISC 150Lxg The Nature of Human Health and Disease (4, FaSp) The human organism; the nature of inherited and acquired diseases; the biological and societal basis for the AIDS epidemic; therapy, drug design and the future. Not available for major credit.

BISC 180Lxg Evolution (4, Sp) Changes in the physical and biological universe over time; origins of life, dinosaurs, human evolution. Implications of evolutionary mechanisms and mass extinctions for human survival. Not available for major credit.

BISC 193 Freshman Colloquium I (1, Fa) A series of lectures and discussions at which faculty of the department introduce their research activities to students entering biology and related majors. Graded CR/NC. *Corequisite*: BISC 120L or BISC 121L.

BISC 194 Freshman Colloquium II (1, Sp) A series of lectures and discussions at which faculty of the department introduce their research activities to students entering biology and related majors. Graded CR/NC. *Corequisite*: BISC 220L or BISC 221L.

BISC 220L General Biology: Cell Biology and Physiology (4, Sp) In-depth survey of key topics related to advances in our knowledge of cellular biology and physiology; cell composition/metabolism; gene action; organism structure and function. (Duplicates credit in BISC 110L, BISC 111L, and BISC 221L.) *Recommended preparation*: high school chemistry; BISC 120L or BISC 121L.

BISC 221L Advanced General Biology: Cell Biology and Physiology (4, Sp) Equivalent to 220L, but taught at a higher level for exceptionally well-prepared students. Admission to the course by departmental approval only. (Duplicates credit in BISC 110L, BISC 111L, and BISC 220L) *Prerequisite*: BISC 120L or BISC 121L; *corequisite*: CHEM 105bL or CHEM 115bL.

BISC 230Lxg Brain, Mind and Machines: Topics in Neuroscience (4, Sp) The structure and function of the mammalian brain including the role of the brain in regulating behavior, both in normal and diseased states; in relation to mind; and in comparison with machine forms of intelligence. Not available for major credit.

BISC 290 Introduction to Biological Research (2 or 4, max 4, FaSpSm) Experience in basic techniques through supervised research in the research laboratory of a departmental faculty member. Graded CR/NC. *Prerequisite*: BISC 120L or BISC 121L; BISC 220L or BISC 221L; CHEM 105bL or CHEM 115bL; departmental approval.

BISC 300L Introduction to Microbiology (4, Sp) Comparative approach to bacteria, Archaea and viruses; their structure, life cycles, geochemical activity, ecology and nutrition. Fundamentals of metabolism and microbial genetics. Lecture, 3 hours; laboratory, 3 hours. *Prerequisite*: BISC 320, CHEM 322aL or CHEM 325aL.

BISC 305 Introduction to Statistics for Biologists (4, Fa) Statistical methods in biological science and medicine, including populations and samples, random sampling, confidence intervals, paired samples and regression.

BISC 307L General Physiology (4, Sp) Physiological functions of the circulatory, digestive, endocrine, integumentary, musculoskeletal, nervous, respiratory, and urogenital systems of animals. Lecture, 3 hours; laboratory, 3 hours. *Prerequisite*: BISC 220L or BISC 221L.

BISC 313L Evolution and Population Genetics (4, Sp) History of evolutionary thought; molecular basis for evolution; dynamics of genes in populations; speciation and macroevolution; patterns of evolution. Laboratory, 2 hours. *Prerequisite*: BISC 220L or BISC 221L; BISC 120L or BISC 121L; *recommended preparation*: BISC 320L, BISC 325, and familiarity with algebra, basic chemistry, and basic physics.

BISC 315L Introduction to Ecology (4, Fa) Organism-environment interactions; dynamics of populations, communities, and ecosystems; evolutionary forces. Lecture, 3 hours; laboratory, 3 hours. *Prerequisite*: BISC 120L or BISC 121L.

BISC 320L Molecular Biology (4, Fa) Structure and synthesis of nucleic acids and proteins; molecular biology of prokaryotes and eukaryotes; principles of genetics and cell biology. (Duplicates credit in BISC 311.) *Prerequisite*: CHEM 105bL or CHEM 115bL.

BISC 321x Science, Technology and Society (2, Sp) Builds upon a basic science background to provide students with an awareness of cutting edge scientific research, its technological applications and its societal ramifications. Not available for major credit. (Duplicates credit in former MDA 321.) *Prerequisite*: BISC 120L or BISC 121L or BISC 220L or BISC 221L; CHEM 105aL or CHEM 115aL; PHYS 135aL or PHYS 151L.

BISC 325 Genetics (4, Fa) Transmission genetics and genotype/phenotype; mapping methods; complex traits; genetics of human disease and population genetics. *Prerequisite*: BISC 120L or BISC 121L; BISC 220L or BISC 221L; BISC 320L; CHEM 322aL; *corequisite*: CHEM 322bL or CHEM 325bL.

BISC 330L Biochemistry (4, Sp) Basic biochemical principles; classes of molecules — structure and function; cellular energetics. (Duplicates credit in BISC 316L.) *Prerequisite*: BISC 320L; CHEM 322aL.

BISC 369L Ecology and the Natural History of California (4, Sp) Marine, freshwater, and terrestrial communities of California. Life histories, morphology, special evolutionary adaptations. Relationships between organisms and their biological-physical-chemical environment. Offered on Catalina. Emphasis on field biology. *Prerequisite:* BISC 120L or BISC 121L.

BISC 371L Molecular Approaches to the Diversity of Life (4) Patterns of evolutionary change investigating the molecular basis of heredity utilizing DNA data. History, principles and application of molecular systematics, and genetic variation. Taught on Catalina Island. *Prerequisite:* BISC 120L or BISC 121L; BISC 220L or BISC 221L; *recommended preparation:* BISC 320L.

BISC 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

BISC 403 Advanced Molecular Biology (4, Fa) Molecular mechanisms and control of DNA replication, DNA repair, recombination, gene expression, cell growth, and development in prokaryotic and eukaryotic organisms, from bacteria to humans. *Prerequisite:* BISC 320L; *recommended preparation:* BISC 313 or BISC 325.

BISC 405L General Embryology (4, Fa) Vertebrate and human development: cellular differentiation; germ cell development and growth; hormonal regulation of reproductive cycles; cleavage through neurulation and subsequent development of primary organs. Lecture, 3 hours; laboratory, 3 hours. Junior standing. *Prerequisite:* BISC 120L or BISC 121L; BISC 220L or BISC 221L; *recommended preparation:* two from BISC 313, BISC 320L, BISC 325 and BISC 330L.

BISC 406L Biotechnology (4, Fa) Techniques in molecular biology and biochemistry applied to prokaryotic and eukaryotic model systems; applications of recombinant DNA and genomic technology. *Prerequisite:* BISC 320L; *recommended preparation:* BISC 313 or BISC 325.

BISC 408 Systems Neuroscience: From Synapses to Perception (4, Sp) (Enroll in NEUR 408)

BISC 410 Applications of Molecular Biology to Medicine (4, Sp) Advances and trends in the understanding, diagnosis and treatment of human diseases. Senior standing. *Prerequisite:* BISC 330L.

BISC 411 Advanced Cell Biology (4, FaSpSm) The synthesis, transport and assembly of the complex structures that mediate eukaryotic cellular function. Electrical and biochemical mechanisms underlying intercellular communication. *Prerequisite:* BISC 220L or BISC 221L; BISC 320L.

BISC 414 Biology of Cancer (4, Sp) Focus on the advances in molecular biology of cancer, from fundamental molecular signaling pathways to DNA repair to stem cell biology, through primary research literature reviews. *Prerequisite:* BISC 325.

BISC 419 Environmental Microbiology (4, Sp) Qualitative and quantitative appraisal of microbial activities in pure and contaminated environments; microbial community and its development; interspecific relationships; effects of microorganisms on their surroundings. Lecture, 4 hours. *Prerequisite:* BISC 330L; *recommended preparation:* BISC 300L.

BISC 421 Neurobiology (4, Fa) Structure, function, and development of nervous systems; neural integration and mechanisms of behavior; organization and operation of brains. Lecture, 3 hours; discussion, 2 hours. *Prerequisite:* BISC 220L or BISC 221L.

BISC 422L Neurobiology Laboratory (2, Sp) Experimentation on excitable cells, synapses, and neural circuits; intracellular and extracellular techniques for recording, stimulation, and identification of nerve and muscle cells. Lecture, 1 hour; laboratory, 3 hours. *Corequisite:* BISC 421.

BISC 423 Epilepsy to Ecstasy: Biological Basis of Neurological Disorders (4, Sp) Examination of various neurological disorders originating from developmental signaling and/or anatomical abnormalities. *Prerequisite:* BISC 421.

BISC 424 Brain Architecture (4, Fa) How the parts of the brain are interconnected to form a complex biological computer, from historical, evolutionary, and developmental perspectives. *Prerequisite:* BISC 421.

BISC 425 Advanced Genetics through the Primary Scientific Literature (4, Sp) Literature-based seminar in current and classical topics in genetics. *Prerequisite:* BISC 325.

BISC 426 Principles of Neural Development (4, Sp) Basic phenomena and principles of neural development, their relation to functional development of neural circuits, behavior, and disease. General concepts and experimental approaches are emphasized. *Prerequisite:* BISC 421.

BISC 427 The Global Environment (4, FaSpSm) Earth's development as a habitable planet, from origin to human impacts on global biogeochemical cycles in the ocean, land, atmosphere. Discussion of environmental alternatives. Open only to biological sciences, environmental sciences, and earth sciences majors. *Prerequisite:* BISC 120L or BISC 121L; CHEM 105bL or CHEM 115bL.

BISC 428 The Biology of Tropical Diseases (4, max 8, Sm) Biological and biochemical approaches to the prevention and treatment of infectious and chronic tropical diseases. Course is offered off campus and summer only.

BISC 431L Aquatic Microbiology — Catalina Semester (4, Fa) Introduction to the habitat, phylogenetic, physiological and metabolic diversity of microbial life in aquatic environments. (Duplicates credit in BISC 419.) *Prerequisite:* BISC 330L.

BISC 435 Advanced Biochemistry (4, Sp) Macromolecular structure and function; enzymology; metabolic regulation. Lecture, 3 hours; discussion, 2 hours. *Prerequisite:* BISC 330L.

BISC 437L Comparative Physiology of Animals (4, Sp) Control of the internal environment of animals in relation to their external environment. Thermal regulation, osmoregulation, excretion, and ion balance. Offered on Catalina. Lecture, 3 hours; laboratory, 3 hours. *Prerequisite:* BISC 120 or BISC 121; BISC 220 or BISC 221; *recommended preparation:* two from BISC 313, BISC 320L, BISC 325 and BISC 330L.

BISC 440 Biodemography of Aging (4) (Enroll in GERO 440)

BISC 445L Fundamentals of Vertebrate Biology (4, Sp) Evolution and comparative anatomy of vertebrates. Lecture, 3 hours; laboratory, 3 hours. Junior standing. *Prerequisite:* BISC 120L or BISC 121L; BISC 220L or BISC 221L; *recommended preparation:* two from BISC 313, BISC 320L, BISC 325 and BISC 330L.

BISC 447L Island Biogeography and Field Ecology (4, Sp) Biogeography, geology, ecology, climate, flora, and fauna of terrestrial and marine environments of Catalina and the Channel Islands including laboratory and field techniques of ecology. Taught on Catalina Island. *Prerequisite:* BISC 120L or BISC 121L.

BISC 450L Principles of Immunology (4, Fa) Immune processes, humoral and cellular; immunoglobulins; antibody formation; antigen-antibody interactions; immune dyscrasias; transplantation and tumor immunology; basic hematology and immuno-hematology. Lecture, 3 hours; laboratory, 3 hours. *Prerequisite:* BISC 220L or BISC 221L.

BISC 455L Molecular Approaches to Microbial Diversity — Catalina Semester (4, Fa) Overview and practical application of genetic and immunological techniques for examining diversity and community structure of natural microbial assemblages in aquatic ecosystems. *Prerequisite:* BISC 320L; *corequisite:* BISC 431L.

BISC 456L Conservation Genetics (4, Sp) Biological principles underlying conservation including ecology, evolution, genetics and biogeography. Covers both marine and terrestrial environment, with special emphasis on island biology. Catalina semester only. (Duplicates credit in BISC 373L.) *Prerequisite:* BISC 120L or BISC 121L; BISC 220L or BISC 221L; *recommended preparation:* BISC 320L; BISC 313 or BISC 325.

BISC 457L Methods in Marine Biology and Biological Oceanography — Catalina Semester (4, Sp) Introduction to standard methods used in oceanography and marine biology through a combination of lectures, laboratory exercises and field experiences. *Prerequisite:* BISC 120Lg or BISC 121Lg.

BISC 460 Seminar in Marine and Environmental Biology (2, max 4, FaSp) Topical seminar in marine and environmental biology. Junior, senior or graduate standing.

BISC 461 Seminar in Molecular and Computational Biology (2, max 4, FaSpSm) Topical seminar in molecular and computational biology. Junior, senior or graduate standing.

BISC 462 Seminar in Neurobiology (2, max 4, FaSp) Topical seminar in neurobiology. Junior, senior or graduate standing.

BISC 469L Marine Biology (4, Fa) Oceanography and marine biology, sampling techniques, evolutionary adaptations, morphology, systematics. Lecture, 3 hours; laboratory, 3 hours. Field trip and field research projects required. *Prerequisite:* BISC 120L or BISC 121L.

BISC 473L Biological Oceanography (4, Sp) Biological, physical, chemical dynamics and analysis of the ocean; primary production of phytoplankton, secondary production by zooplankton, bacterial remineralization; physiology, ecology of fishes, marine mammals. Lecture, 3 hours; laboratory, 3 hours. Junior standing. *Prerequisite:* BISC 120L or BISC 121L; BISC 220L or BISC 221L; *recommended preparation:* two from BISC 313, BISC 320L, BISC 325 and BISC 330L.

BISC 474L Ecosystem Function and Earth Systems (4, Fa) General principles of ecosystem function, energy flow and materials cycling in marine systems at various scales and the importance of microbial processes in these systems. Taught on Catalina Island. *Prerequisite:* BISC 120L or BISC 121L.

BISC 478 Computational Genome Analysis (4, Sp) Introduction to and applications of algorithms and statistics to genome analysis. Analysis of physical and genetic maps, DNA sequencing, sequence comparisons, DNA chips.

BISC 480 Developmental Biology (4, FaSp) Basic mechanisms of animal development are considered at different levels of analysis. Emphasis is on molecular, genetic, and cellular processes underlying vertebrate and invertebrate development. General concepts and evolutionary mechanisms are emphasized. Lecture, 3 hours; discussion, 2 hours. *Prerequisite:* BISC 220L or BISC 221L.

BISC 481 Structural Bioinformatics: From Atoms to Cells (4, Fa) Introduction to computational and experimental methods for structural bioinformatics. Analysis of macromolecules and their complexes.

BISC 483 Geobiology and Astrobiology (4, Sp) Relationships between microbiota and the earth environment including the hydrosphere, lithosphere and atmosphere, with consideration of the potential for life on other planets. *Prerequisite:* BISC 120L, CHEM 105bL.

BISC 485 Advanced Seminar in Bacterial Survival and Evolution (4, Sp) Literature-based seminar in current topics in microbial evolution and adaptation. *Prerequisite:* BISC 120 or BISC 121, BISC 220 or BISC 221, BISC 320, CHEM 322a or CHEM 325a.

BISC 490x Directed Research (1–8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

BISC 493x Honors Seminar (1, max 4, FaSp) Not available for graduate credit. *Prerequisite:* BISC 120L or BISC 121L; BISC 220L or BISC 221L.

BISC 494x Honors Thesis (2, FaSp) Not available for graduate credit. *Prerequisite:* BISC 493.

BISC 499 Special Topics (2–4, max 8, FaSp) Lecture and discussion in specialized areas of the biological sciences. Students cannot register more than twice for this course. Not open to freshmen and sophomores. *Recommended preparation:* BISC 220L or BISC 221L, BISC 320L, BISC 325 and BISC 330L.

BISC 502ab Molecular Genetics and Biochemistry (4–4, FaSp) Current genetic and biochemical analysis of replication, recombination, mutagenesis, and repair. Fundamentals of transcription and regulation of gene expression. Recent applications of genetic engineering and genome analysis.

BISC 504L Laboratory Techniques in Cellular and Molecular Biology (1–4, max 8, FaSp) Rotation of graduate students through Molecular Biology research laboratories to learn the major technological skills required in the field. Graded CR/NC.

BISC 505 Genomics and Molecular Genetics (4, Sp) Molecular genetics (mutagenesis, repair, recombination, and gene regulation) from quantitative and mechanistic approaches. Simple and complex genome analysis using recombinant DNA, physical, and computational techniques. *Recommended preparation:* BISC 502b.

BISC 511 Integrative Biology (4, Fa) Current topics in integrative biology including form, function and energy use throughout the lifespan in the context of genetics, natural selection and ecology. (Duplicates credit in the former BISC 510a.)

BISC 512 Evolutionary Biology (4, Sp) Survey of current topics in evolutionary biology; genetics, natural selection, ecology; emphasis on higher order complex questions of lifespan, form, function, and energy use. (Duplicates credit in the former BISC 510b.)

BISC 515 Evolution and Human Biology (4, Fa) Topics in evolution and human biology with emphasis on lifespan, form, function and energy use in the context of genetics, natural selection and ecology.

BISC 519 Recent Advances in Neurobiology and Endocrinology of Aging (2, 4) (Enroll in GERO 519)

BISC 520 Recent Advances in Neurobiology (2 or 4, max 12, Fa) Lectures on selected topics in neurobiology. Registration restricted to three semesters. *Prerequisite:* graduate status in departmental program or departmental approval.

BISC 521 Hearing and Communication Neuroscience (4, Sp) A basic grounding in broad aspects of the neuroscience of hearing and vocal communication. *Prerequisite:* BISC 421, NEUR 524.

BISC 522 (3, Sp) (Enroll in AME 520)

BISC 529 Seminar in Marine Biology (1, max 4, FaSp) Graded CR/NC.

BISC 530 Advanced Seminar in Plankton Biology (2, FaSp) An overview of phytoplankton and zooplankton taxa, their morphologies and life histories using material collected from the local environment off LA and near the Phillip K. Wrigley Marine Science Center on Catalina Island.

BISC 531 Advanced Seminar on the Physiology of Marine Organisms (2, FaSp) Physiological processes dictate survival potential, growth rates, and many other biological processes that affect the distribution of species in the oceans. Emphasis on the diverse environmental factors that influence physiological adaptations of marine organisms. Examples from a wide variety of marine organisms, from bacterial to animals, will be studied.

BISC 532 Advanced Seminar in Molecular and Microbial Ecology (2, FaSp) Microorganisms dominate biological processes in the ocean. These species pose significant problems for estimating species diversity, abundance and activity. Examination of modern molecular biological approaches for analyzing aquatic microbial communities and their ecological roles.

BISC 533 Advanced Seminar in Remote Sensing and Modeling (2) Modern oceanographic methods for making remote measurements of aquatic and terrestrial ecosystems using satellite imagery and other means. Integrating these data into models that describe ecosystem structure and enable interpretation of ecosystem function.

BISC 534 Advanced Seminar in Population Genetics of Marine Organisms (2) An overview of the theory underlying population and quantitative genetics, with applications to marine systems. Basic evolutionary mechanisms (mutation, migration, drift, selection, non-random mating) and modern evidence for their roles in structuring genetic variation within and among marine populations.

BISC 535 Seminar in Physiology (2, max 8, FaSp)

BISC 536 Advanced Seminar in Marine Biogeochemistry (2) Examination of the interplay between ocean biology and the cycling of carbon, nitrogen and other elements on a local, regional and global scale. Open only to graduate students in biology and earth science.

BISC 537 Seminar in Cellular and Molecular Biology (2, max 8, FaSp)

BISC 538 Metals and Biology in Oceanic Regimes (2, Sp) Relationships between metals in reducing regimes and microbes that utilize them for metalloenzymes. Focus on biological availability of micronutrient and processes like chemoautotrophy or biomineralization.

BISC 542 Seminar in Molecular Biology (1, max 6, FaSp) Graded CR/NC.**BISC 543 Human Molecular Genetics (4)** (Enroll in BIOC 543)

BISC 544 Advanced Reading in Molecular Biology (2, FaSpSm) Advanced training for molecular biology graduate students in reading primary journal articles. Emphasis on critical analyses of primary scientific literature. Open only to graduate students in molecular and computational biology and bioinformatics programs.

BISC 549 Seminar in Integrative and Evolutionary Biology (2, max 6, FaSp) Current topics in integrative and evolutionary biology.

BISC 572 Systems Physiology and Disease I (4, Fa) (Enroll in INTD 572)**BISC 574 Systems Physiology and Disease II (4, Sp)** (Enroll in INTD 573)

BISC 576 Practical Statistics and Bioinformatics (2, Fa) Practical experience in statistics and bioinformatics methods, software packages applicable to molecular biology, genomics analysis, and structural bioinformatics and their underlying principles. Open only to doctoral students.

BISC 577ab Computational Molecular Biology Laboratory (a: 2, Sp; b: 2, Fa) Practical experience in computational molecular biology applications. Mathematical and statistical software packages relevant to genomic analysis. Retrieval and analysis of genomic data from databases. (Duplicates credit in former MATH 577ab.) *Recommended preparation:* higher level programming language.

BISC 581L Current Problems in Marine Sciences (4, max 16, Irregular) In-depth studies on selected problems of current interest in the marine sciences. Lecture and laboratory.

BISC 582 Advanced Biological Oceanography 4, Fa) Aspects of physics and chemistry of the oceans. Qualitative and quantitative considerations of the ecology of pelagic and benthic communities.

BISC 583 Evolution and Adaptation of Marine Organisms (4, Sp) Fundamentals of evolutionary patterns and processes in the marine environment, with emphasis on rates of adaptation to a changing ocean.

BISC 584 Faculty Lecture Series (2, Sp) Multi-instructor course designed to introduce students to the breadth and depth of faculty interests within the Marine Environmental Biology section of Biological Sciences and the Natural History Museum.

BISC 585 Scientific Writing and Reviewing (2, Sp) Hands-on experience writing and reviewing scientific literature. The review process and participation in writing and reviewing their own proposals.

BISC 586 Biological Oceanographic Instrumentation (2, Sp) Survey of analytical principles, theory and application behind commonly used methodologies in biological oceanography.

BISC 587 Communicating Ocean Science (4, Sp)

Multi-instructor, interdisciplinary course focused on student awareness and improvement of cognitive processes used in research development, and communication of ocean literacy in the public sector. Open only to Senior, Master's, Professional, and Doctoral Students. *Recommended preparation:* Graduate level understanding of oceanographic principles.

BISC 588L Quantitative Analysis for Biological and Earth Sciences (4, Sp) Basics of biometrics, biodiversity, quantitative methods in ecology, environmental impact assessments and other topics in quantitative analysis.

BISC 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

BISC 593 Practicum in Teaching the Biological Sciences (2, Fa) Practical principles for the long-term development of effective teaching within college disciplines. Intended for teaching assistants in Dornsife College. Graded CR/NC.

BISC 599 Special Topics (2-4, max 8, Irregular)

BISC 790 Research (1-12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

BISC 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC.

Chemistry

Seeley G. Mudd 418

(213) 740-7036

FAX: (213) 740-2701

Email: chemmail@dornsife.usc.edu

chem.usc.edu

Chair: Chi H. Mak, Ph.D.

Faculty

Distinguished Professor and Donald P. and Katherine B. Loker Chair in Organic Chemistry: George A. Olah, Ph.D.

Distinguished Professor of Chemistry and Biochemistry: Arieh Warshel, Ph.D.

Lloyd Armstrong, Jr. Chair for Science and Engineering: Hanna Reisler, Ph.D.

Ray R. Irani, Chairman of Occidental Petroleum Corp., Chair in Chemistry: James F. Haw, Ph.D.

Paul A. Miller Chair in Letters, Arts and Sciences: Curt Wittig, Ph.D.

Harold and Lillian Moulton Chair in Chemistry: Nicos Petasis, Ph.D.

George A. and Judith A. Olah Nobel Laureate Chair in Hydrocarbon Chemistry: G.K. Surya Prakash, Ph.D.

Judge Widney Professor of Chemical Engineering and Chemistry: Ray R. Irani, Ph.D.

Professors: Stephen E. Bradforth, Ph.D.; Lin Chen, Ph.D. (*Biological Sciences*); Xiaojiang Chen, Ph.D. (*Biological Sciences*); Myron F. Goodman, Ph.D. (*Biological Sciences*); Thieo E. Hogen-Esch, Ph.D.; Anna Krylov, Ph.D.; Daniel A. Lidar, Ph.D. (*Electrical Engineering*); Chi H. Mak, Ph.D.*; Charles E. McKenna, Ph.D.*; Richard W. Roberts, Ph.D.; Kenneth L. Servis, Ph.D.; Lawrence A. Singer, Ph.D.*; Mark E. Thompson, Ph.D.; Andrey Vilesov, Ph.D.

Associate Professors: Alexander Benderskii, Ph.D.; Richard L. Brutchey, Jr., Ph.D.; Julio Camarero, Ph.D. (*Pharmacology and Pharmaceutical Sciences*); Stephen B. Cronin, Ph.D. (*Electrical Engineering*);

Electrophysics); Kyung Woon Jung, Ph.D.; Peter Z. Qin, Ph.D.; Clay C. Wang, Ph.D. (*Pharmacology and Pharmaceutical Sciences*); Travis J. Williams, Ph.D.

Assistant Professors: Andrea Armani, Ph.D. (*Chemical Engineering*); Jahan Dawlaty, Ph.D.; Brent Melot, Ph.D.; Fabien Pinaud, Ph.D. (*Biological Sciences*); Matthew Pratt, Ph.D.; Remo Rohs, Ph.D. (*Biological Sciences*); Susumu Takahashi, Ph.D.; Barry C. Thompson, Ph.D.; Travis J. Williams, Ph.D.; Chao Zhang, Ph.D.

Professors (Research): Karl O. Christe, Ph.D.; Sri Narayan, Ph.D.

Associate Professor (Research): Golam Rasul, Ph.D.

Assistant Professors (Research): Peter Djurovich, Ph.D.; Ralf Haiges, Ph.D.; Terry Takahashi, Ph.D.

Assistant Professor (Teaching): Jessica Parr, Ph.D.

Lecturers: Thomas M. Bertolini, Ph.D.; Rebecca Broyer, Ph.D.

Emeritus Professors: Robert A. Beaudet, Ph.D.; David A. Dows, Ph.D.; Thomas C. Flood, Ph.D.; Otto Schnepf, Ph.D.; Gerald A. Segal, Ph.D.; Howard S. Taylor, Ph.D.; William P. Weber, Ph.D.*

*Recipient of university-wide or college teaching award.

Programs

The Department of Chemistry offers degree programs that provide undergraduate and graduate students with core instruction and excellent research opportunities. Undergraduate programs leading to the B.S. and B.A. degrees are offered. The B.S. degree is intended for persons preparing for careers in chemistry and satisfies the guidelines for a chemistry degree recommended by the American Chemical Society. The B.A. degree is designed for students who wish a concentration of course work in chemistry, but who have career plans in the health sciences, business or law. In addition, a chemistry minor is available for students who want a broader exposure to the chemical sciences. The B.S. in Biochemistry is offered as a joint program with the Department of Biological Sciences. A minor program in biotechnology is offered by the Departments of Biological Sciences and Chemistry and the Marshall School of Business and a minor program in environmental chemistry and sustainability is also offered. Graduate programs are offered leading to the Master of Arts, Master of Science and Doctor of Philosophy in Chemistry.

Undergraduate Degrees

Bachelor of Science and Bachelor of Arts in Chemistry

In addition to the general education, writing, foreign language and diversity requirements for a degree in the USC Dornsife College of Letters, Arts and Sciences, the following courses are required.

Bachelor of Science in Chemistry

REQUIRED COURSES, LOWER-DIVISION		UNITS
CHEM 105aLbL	General Chemistry, or	
CHEM 115aLbL	Advanced General Chemistry	4-4
MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 225	Linear Algebra and Linear Differential Equations, or	
MATH 226	Calculus III	4
PHYS 151L	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4
PHYS 153L	Fundamentals of Physics III: Optics and Modern Physics	4
REQUIRED COURSES, UPPER-DIVISION		UNITS
CHEM 300L	Analytical Chemistry	4
CHEM 325abL	Organic Chemistry	4-4
CHEM 332L	Physical Chemical Measurements	4
CHEM 426	Advanced Organic Chemistry	4
CHEM 430ab	Physical Chemistry	4-4
CHEM 453	Advanced Inorganic Chemistry	4

CHEM 423L	Advanced Laboratory Techniques in Organic and Inorganic Chemistry, or	
CHEM 465L	Chemical Instrumentation	4
CHEM 490x	Directed Research	4

Bachelor of Science in Chemistry (Research)

REQUIRED CORE COURSES, LOWER-DIVISION		UNITS
CHEM 115aLbL	Advanced General Chemistry	4-4
MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 225	Linear Algebra and Linear Differential Equations, or	
MATH 226	Calculus III	4
PHYS 151L	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4
PHYS 153L	Fundamentals of Physics III: Optics and Modern Physics	4
REQUIRED CORE COURSES, UPPER-DIVISION		UNITS
CHEM 300L	Analytical Chemistry	4
CHEM 325abL	Organic Chemistry	4-4
CHEM 426	Advanced Organic Chemistry	4
CHEM 430ab	Physical Chemistry	4-4
CHEM 453	Advanced Inorganic Chemistry	4

REQUIRED CORE COURSES, UPPER-DIVISION		UNITS
CHEM 300L	Analytical Chemistry	4
CHEM 325abL	Organic Chemistry	4-4
CHEM 426	Advanced Organic Chemistry	4
CHEM 430ab	Physical Chemistry	4-4
CHEM 453	Advanced Inorganic Chemistry	4

ADVANCED LABORATORY ELECTIVE,

FOUR UNITS FROM AMONG:		UNITS
CHEM 332L	Physical Chemical Measurements	4
CHEM 423L	Advanced Laboratory Techniques in Organic and Inorganic Chemistry	4
CHEM 463L	Chemical Nanotechnology Laboratory	2
CHEM 465L	Chemical Instrumentation	4
CHEM 467L	Advanced Chemical Biology Laboratory	2

REQUIRED RESEARCH COURSES		UNITS
CHEM 292	Supervised Research	4
CHEM 294	Undergraduate Research Seminar	2
CHEM 490x	Directed Research	4
CHEM 494x	Advanced Research Experience	4

Bachelor of Science in Chemistry (Chemical Nanoscience)

REQUIRED CORE COURSES, LOWER-DIVISION		UNITS
CHEM 105aLbL	General Chemistry, or	
CHEM 115aLbL	Advanced General Chemistry	4-4
MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 225	Linear Algebra and Linear Differential Equations, or	
MATH 226	Calculus III	4

PHYS 151L	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4
PHYS 153L	Fundamentals of Physics III: Optics and Modern Physics	4

REQUIRED CORE COURSES, UPPER-DIVISION		UNITS
CHEM 300L	Analytical Chemistry	4
CHEM 325abL	Organic Chemistry	4-4
CHEM 332L	Physical Chemical Measurements	4
CHEM 430ab	Physical Chemistry	4-4
CHEM 453	Advanced Inorganic Chemistry	4
CHEM 455	Chemical Nanotechnology	4
CHEM 463L	Chemical Nanotechnology Laboratory	2
CHEM 490x	Directed Research	4

CHEMICAL NANOSCIENCE ELECTIVE,

TWO COURSES FROM AMONG (5 OR 6 UNITS):		UNITS
CHE 487	Nanotechnology and Nanoscale Engineering through Chemical Processes	3
CHEM 499	Special Topics	2
CHEM 561	Polymer Synthesis	4
CHEM 588a	X-ray Crystallography	2

Bachelor of Science in Chemistry (Chemical Biology)

REQUIRED CORE COURSES, LOWER-DIVISION		UNITS
BISC 220L	General Biology: Cell Biology and Physiology, or	
BISC 221L	Advanced General Biology: Cell Biology and Physiology	4
CHEM 105aLbL	General Chemistry, or	
CHEM 115aLbL	Advanced General Chemistry	4-4
MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 225	Linear Algebra and Linear Differential Equations, or	
MATH 226	Calculus III	4
PHYS 151L	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4

REQUIRED CORE COURSES, UPPER-DIVISION		UNITS
BISC 320L	Molecular Biology	4
CHEM 300L	Analytical Chemistry	4
CHEM 325abL	Organic Chemistry	4-4
CHEM 430a	Physical Chemistry, or	
CHEM 432	Physical Chemistry for the Life Sciences	4
CHEM 430b	Physical Chemistry	4
CHEM 463L	Chemical Nanotechnology Laboratory	2
CHEM 467L	Advanced Chemical Biology Laboratory	2
CHEM 490x	Directed Research	4

ADVANCED LABORATORY ELECTIVE,**FOUR UNITS FROM AMONG:**

	UNITS
CHEM 332L Physical Chemical Measurements	4
CHEM 423L Advanced Laboratory Techniques in Organic and Inorganic Chemistry	4
CHEM 465L Chemical Instrumentation	4

ADVANCED CHEMISTRY ELECTIVE,**TWO COURSES FROM AMONG:**

	UNITS
CHEM 426 Advanced Organic Chemistry	4
CHEM 453 Advanced Inorganic Chemistry	4
CHEM 519 Biochemistry and Molecular Biology: An Introduction for Chemists	4

Bachelor of Arts in Chemistry**REQUIRED COURSES, LOWER-DIVISION**

	UNITS
CHEM 105aLbL General Chemistry, or	
CHEM 115aLbL Advanced General Chemistry	4-4
MATH 125 Calculus I	4
MATH 126 Calculus II	4
MATH 225 Linear Algebra and Differential Equations, or	
MATH 226 Calculus III	4
PHYS 151L Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L Fundamentals of Physics II: Electricity and Magnetism	4
PHYS 153L Fundamentals of Physics III: Optics and Modern Physics	4

REQUIRED COURSES, UPPER-DIVISION

	UNITS
CHEM 300L Analytical Chemistry	4
CHEM 325aLbL Organic Chemistry	4-4
CHEM 430ab Physical Chemistry	4-4

one course from among:

CHEM 332L Physical Chemical Measurements	4
CHEM 423L Advanced Laboratory Techniques in Organic and Inorganic Chemistry	4
CHEM 453 Advanced Inorganic Chemistry	4
CHEM 490x Directed Research	1-8

One additional upper-division science elective

Physical Sciences Major Requirements (B.S.)**REQUIRED COURSES, LOWER-DIVISION**

	UNITS
CHEM 105aLbL General Chemistry, or	
CHEM 115aLbL Advanced General Chemistry	4-4
GEOL 105L Planet Earth	4
PHYS 151L Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L Fundamentals of Physics II: Electricity and Magnetism	4
PHYS 153L Fundamentals of Physics III: Optics and Modern Physics	4

REQUIRED COURSES, UPPER-DIVISION

	UNITS
Astronomy elective*	4
Chemistry elective*	4
Earth Sciences elective*	4
Physics elective*	4
Three additional electives from these fields*	4
*Upper-division courses must be applicable to majors in their respective departments.	

OTHER COURSES

	UNITS
MATH 125 Calculus I	4
MATH 126 Calculus II	4
MATH 226 Calculus III	4
Total units	64

Bachelor of Science in Biochemistry

This degree is offered jointly by the Departments of Biological Sciences and Chemistry. An honors option is also available. See the Department of Biological Sciences for the complete description, page 282xx.

Biotechnology Minor

The USC Dornsife College of Letters, Arts and Sciences departments of biological sciences and chemistry and the Marshall School of Business jointly offer the cross-departmental minor in biotechnology. This minor brings essential knowledge in the basic sciences together with the corporate skills needed in a rapidly growing industry. The minor is especially well suited for the business, biology, chemistry or engineering student seeking a career in business and/or the biomedical/biotechnical sciences. See Biological Sciences, page 283xx, for course requirements.

Chemistry Minor

A chemistry minor is available for students who wish to broaden their exposure to the chemical sciences. In addition to a core of five chemistry courses (year-long sequences in general chemistry and organic chemistry and a one semester course in analytical chemistry), students must take one upper-division chemistry elective in either advanced organic or advanced inorganic chemistry.

Biology majors must take CHEM 300L, CHEM 426 and CHEM 453.

REQUIRED COURSES, LOWER-DIVISION

	UNITS
CHEM 105aLbL General Chemistry, or	
CHEM 115aLbL Advanced General Chemistry	4-4

REQUIRED COURSES, UPPER-DIVISION

	UNITS
CHEM 300L Analytical Chemistry	4
CHEM 322aLbL Organic Chemistry, or	
CHEM 325aLbL Organic Chemistry	4-4
CHEM 426 Advanced Organic Chemistry, or	
CHEM 453 Advanced Inorganic Chemistry	4

Environmental Chemistry and Sustainability Minor

The environmental chemistry and sustainability minor is designed for students majoring in business, engineering, law, communications and other professional fields to give them the knowledge of chemistry needed to understand, formulate and manage scientific issues

related to natural environmental processes as well as technologies involving the environment.

REQUIRED COURSES, LOWER-DIVISION

	UNITS
CHEM 105aLbL General Chemistry, or	
CHEM 115aLbL Advanced General Chemistry	4-4

REQUIRED COURSES, UPPER-DIVISION

	UNITS
CHEM 300L Analytical Chemistry	4
ENST 320ab Water and Soil Sustainability; Energy and Air Sustainability	4-4

ONE ELECTIVE COURSE CHOSEN FROM:

	UNITS
CHEM 322aL Organic Chemistry	4
BISC 315L* Introduction to Ecology	4
BISC 419* Environmental Microbiology	4
BISC 427* The Global Environment	4
GEOL 412** Oceans, Climate, and the Environment	4

*Prerequisite required

**Corequisite required

Grade Point Average in Major Subject

A grade of C- or higher is required in each chemistry course specifically listed as a degree requirement. The GPA for all chemistry courses required for a department major or a physical sciences major must be C (2.0) or higher. The GPA for all upper-division chemistry courses must also be C (2.0) or higher.

Honors Programs

A degree with honors in chemistry is available for eligible Chemistry B.A., Chemistry B.S., Chemistry B.S. — Research Emphasis, Chemistry B.S. — Chemical Nanoscience Emphasis, and Chemistry B.S. — Chemical Biology Emphasis students. To meet program requirements students must submit an application to the Department of Chemistry and satisfy the objectives of the program.

Students seeking admission must have at least junior standing (64 units) with an overall USC GPA of 3.5 or better in at least 16 units of chemistry courses. Students must complete 8 units of research (CHEM 490 or CHEM 494, which may also satisfy major requirements*) under the supervision of chemistry faculty with the research results described in an undergraduate thesis reviewed and approved by a faculty committee. To graduate with honors students must earn a GPA of 3.5 in all chemistry courses required for the major and have an overall USC GPA of 3.5.

Upon graduation, transcripts will be noted "Bachelor of Arts with Departmental Honors" for Chemistry B.A. students, or "Bachelor of Science with Departmental Honors" for students who pursued the various Chemistry B.S. majors.

An honors program in biochemistry is offered. See the Department of Biological Sciences for requirements, page 282xx.

*For Chemistry B.S., Chemistry B.S. — Chemical Nanoscience Emphasis, and Chemistry B.S. — Chemical Biology Emphasis, 4 units CHEM 490 are required for the major; for Chemistry B.S. — Research Emphasis, 4 units CHEM 490 and 4 units CHEM 494 are required for the major; and for Chemistry B.A., 1-8 units of CHEM 490x are required for the major.

Graduate Degrees

Close contact between students and faculty is a seminal feature of the chemistry graduate programs. The emphasis is on individualized programs aiming at in-depth understanding and development of scientific maturity. Attention is given to career aims, including research and development; secondary, college and university teaching; and the wide variety of industrial testing, operation and management areas.

Admission Requirements

A baccalaureate degree, equivalent to the B.A. with a major in chemistry at USC, is prerequisite to admission to the graduate program in chemistry. A baccalaureate degree in an appropriate physical science, engineering or mathematics is prerequisite to admission to the doctoral program in chemical physics.

Application must be made to the department on a special form, which includes application for fellowship and teaching assistant appointment and is available from the department Website. Materials describing the faculty, research areas and facilities will be sent to each applicant.

Degree Requirements

These degrees are under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue (page 97xx) for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School.

Master of Arts and Master of Science in Chemistry

The department does not accept applicants for a Master of Arts or Master of Science degree in chemistry. The M.A. and M.S. degrees are intended only as transitional degrees in the process of completing requirements for the Ph.D. in chemistry.

The Master of Arts degree is granted on completion of 24 units of graduate course work (not including 590) approved by the qualifying exam committee, and comprehensive final examinations. The Master of Science degree is granted on completion of 24 units of graduate course work, including not more than eight units (normally two registrations) in directed research, approved by the qualifying exam committee, an approved thesis on the results of an original investigation, and a final oral defense of the thesis. The final defense is made while the thesis is in final draft form.

A qualifying exam committee is appointed for each student. The qualifying exam committee is chaired by the research director in the case of the M.S. option, or by an appropriate member of the faculty in the case of the M.A. option.

Doctor of Philosophy in Chemistry Qualifying Exam Committee

The qualifying exam committee is composed of the research adviser, three other members of the Chemistry Department, and one member from outside the Chemistry Department. The committee is appointed at least one semester before the qualifying examination, and prior to the screening procedure.

Course Requirements

The student must pass a series of graduate courses totaling at least 24 units. The qualifying exam committee may require more than 24 units of graduate course work. Sixty units of registration, including CHEM 790 and CHEM 794, are required for the Ph.D. Registration for CHEM 790 and CHEM 794 should be done with the approval of the staff graduate adviser.

Screening Procedure

The screening requirements designated by the department for continuation in the doctoral program are: an overall grade point average of B or better in at least 24 units by the end of the fourth semester of course work with no grade lower than B-; and a successful research seminar presented by the student to the qualifying exam committee. Only students who have passed the screening requirements are allowed to take the qualifying examination.

Qualifying Examination

The qualifying examination requires the presentation of two original research proposals, or one original research proposal and one critical review of a scientific article, written answers to questions previously submitted by the qualifying exam committee, and oral defense of all of these. The qualifying examination is administered by the qualifying exam committee, which should not be chaired by the research adviser.

Dissertation

An acceptable dissertation based on completion of an original research project is required. The candidate must defend an approved penultimate draft of the dissertation in an advertised oral thesis defense lecture, which is open to the scientific community. The dissertation committee consists of three members of the qualifying exam committee including the research adviser and the outside member.

Foreign Language Requirement

The department has no foreign language requirement.

Doctor of Philosophy in Chemistry (Chemical Physics)

Course Requirements

Completion (with no course grade lower than B-) of 24 units of courses selected from chemistry, physics, mathematics, and engineering, with an overall grade point average not lower than B. These courses must be selected with the advisement and approval of first, the research adviser, and then the thesis chair. All other requirements and procedures are the same as for the Ph.D. in Chemistry.

Seminars and Research Symposium

Seminars are held regularly in physical, inorganic and organic chemistry. All students are expected to attend one and are invited to attend all of these. All students are expected to attend the departmental annual research symposium featuring speakers from all branches of chemistry, who may be local, national or international.

Teaching Experience

Teaching experience is required for the advanced degrees in chemistry.

Courses of Instruction

CHEMISTRY (CHEM)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

CHEM 050x General Chemistry Tutorial (2) Weekly tutorial for selected students in CHEM 105aL. Strong emphasis on chemical mathematics and key concepts in general chemistry. Topics parallel lectures in CHEM 105aL. Not available for degree credit. Graded CR/NC. Discussion, 2 hours. *Concurrent enrollment:* CHEM 105aL.

CHEM 051x General Chemistry Tutorial (2) Structured tutorial for selected students in CHEM 105bL. Strong emphasis on chemical mathematics and key concepts in general chemistry. Topics parallel lectures in CHEM 105bL. Graded CR/NC. Not available for degree credit. *Prerequisite:* CHEM 105a; *concurrent enrollment:* CHEM 105bL.

CHEM 102 The Molecular World (4) Basic chemistry and its impact on the contemporary world. Topics include: structures and reactions of molecules, stoichiometry, nomenclature, gases, solutions.

CHEM 103Lxg General Chemistry for the Environment and Life (4) Chemistry for environmental studies, neuroscience and other life sciences: organic and inorganic structures, nomenclature, stoichiometry, solutions, gases, non-covalent interactions, equilibria, acid-base and redox reactions. Not for major credit in chemistry.

CHEM 105aLg-bL General Chemistry (4-4, FaSpSm) Fundamental principles and laws of chemistry; laboratory work emphasizes quantitative procedures. *Prerequisite* to all more advanced courses in chemistry. Lecture, 3 hours; laboratory and discussion, 4 hours. Quiz, 1 hour. (Duplicates credit in CHEM 115aL or CHEM 115bL.) *Prerequisite for aL:* CHEM 050 or passing of placement test; *for bL:* CHEM 105aL or CHEM 115aL.

CHEM 115aLg-bL Advanced General Chemistry (4-4, a: Fa; b: Sp) Equivalent to 105aLg-bL, but taught at a higher level for exceptionally well-prepared students. Admission to course by departmental approval only. Lecture, 3 hours; lab and discussion, 4 hours; quiz, 1 hour. (Duplicates credit in CHEM 105aL or CHEM 105bL.) *Prerequisite for bL:* CHEM 115aL.

CHEM 201Lgx Chemistry in the Environment, Energy and Society (4) A range of issues where chemistry impacts society will be explored. Topics such as global warming, pollution, energy utilization and genetic engineering will be covered. Students who have taken CHEM 105ab previously or concurrently with CHEM 201 will not receive credit for CHEM 201.

CHEM 203Lxg Chemistry in Life: AIDS Drug Discovery and Development (4, Fa) Scientific principles underlying molecular approaches to diagnosis and treatment of diseases, using specific models within a societal (business, legal, ethical) context. Not available for major credit.

CHEM 205Lxg Chemical Forensics: The Science and Its Impact (4, Sp) Scientific principles underlying forensic approaches to the investigation of crimes and its societal impact on law, culture and media. Not available for major credit.

CHEM 221x Organic Chemistry Problem Solving Workshop (2, Sp) Distance learning course designed to bridge the gap between general and organic chemistry. Focus on problem solving and understanding the language of organic chemistry. Not for major credit for chemistry, chemistry (chemical nanoscience), chemistry (chemical physics), chemistry (research) or chemistry (chemical biology) majors. Graded CR/NC. *Prerequisite:* CHEM 105b.

CHEM 290abcd Special Laboratory (1-1-1-1, FaSpSm) Laboratory component for CHEM 105a, 105b, 322, or 322b for students with equivalent lecture credit from another institution. *Prerequisite:* consent of department head.

CHEM 292 Supervised Research (2, max 4, FaSpSm) Supervised undergraduate research experience. *Corequisite:* CHEM 105a or CHEM 115a.

CHEM 294 Undergraduate Research Seminar (1, max 4, FaSp) Seminars in current research in the chemical and molecular sciences. *Corequisite:* CHEM 105a or CHEM 115a.

CHEM 300L Analytical Chemistry (4, FaSp) Theory and practice in chemical analysis, emphasizing instrumental techniques; error analysis, fractional distillation, extraction; chromatography; visible, ultraviolet, and infrared spectroscopy; introductions to electrochemistry and nuclear magnetic resonance spectroscopy. Lecture, 2 hours; laboratory and discussion. *Prerequisite:* CHEM 105bL or CHEM 115bL.

CHEM 322abL Organic Chemistry (4-4, FaSpSm) Chemistry of the carbon compounds of the aliphatic and aromatic series; laboratory preparation of typical compounds of both series. Lecture, 3 hours jointly with 325abL; laboratory and discussion, 4 hours. For pre-medical and pre-dental students and some categories of biology majors and engineers. *Prerequisite for aL:* CHEM 105bL or CHEM 115bL; *for bL:* CHEM 322aL.

CHEM 325abL Organic Chemistry (4-4, a: Fa; b: Sp) Required of majors in chemistry. Lecture, 3 hours a week with 322abL; laboratory and discussion, 7 hours. *Prerequisite for aL:* CHEM 105bL or CHEM 115bL; *for bL:* CHEM 325aL.

CHEM 332L Physical Chemical Measurements (4, Sp) Experimental study of topics discussed in 430ab; adsorption, magnetic susceptibility; electron spin resonance, kinetics, equilibria, molecular spectra and structure, viscosity, dielectric properties. Discussion, 1 hour; laboratory, 9 hours. *Corequisite:* CHEM 430b.

CHEM 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

CHEM 423L Advanced Laboratory Techniques in Organic and Inorganic Chemistry (4, Sp) Advanced synthetic, analytical, and physical measurement techniques in organic and inorganic chemistry. Emphasis on laboratory work with discussion of theoretical background. Lecture, 2 hours; discussion, 1 hour; laboratory, 8 hours. *Prerequisite:* CHEM 300L, CHEM 322bL or CHEM 325bL.

CHEM 426 Advanced Organic Chemistry (4, Fa) Advanced treatment of organic chemistry from a mechanistic point of view according to the following topics: polar and isopolar reactions, intermediates. Lecture, 3 hours; discussion, 1 hour. *Prerequisite:* CHEM 322bL or CHEM 325bL.

CHEM 430ab Physical Chemistry (4-4, a: Fa; b: Sp) Kinetic theory; equations of state; thermodynamics; phase equilibria; chemical equilibrium; nuclear chemistry, wave mechanics; spectroscopy; statistical thermodynamics; kinetics; electrochemistry; surface and colloid chemistry. Lecture, 3 hours; discussion, 1 hour. *Prerequisite for a:* CHEM 300L or CHEM 322aL or CHEM 325aL; MATH 225 or MATH 226; PHYS 151; *for b:* CHEM 430a or CHEM 432 and PHYS 152.

CHEM 432 Physical Chemistry for the Life Sciences (4, Fa) Principles of physical chemistry relevant for the life sciences: thermodynamics, chemical equilibria, molecular dynamics, kinetics, molecular structures and interactions, spectroscopy, statistical thermodynamics and macromolecular structures. (Duplicates credit in CHEM 430a.) *Prerequisite:* CHEM 300L or CHEM 322aL or CHEM 325aL; MATH 126; PHYS 135aL or PHYS 151L.

CHEM 453 Advanced Inorganic Chemistry (4, Sp) Atomic structure, theory of bonding, molecular structure, metallic state, coordination compounds, transition and nontransition metals, magnetic and optical properties, crystal field theory, mechanism of reactions. Lecture, 3 hours; discussion, 1 hour. *Prerequisite:* CHEM 105bL or CHEM 115bL and CHEM 322aL or CHEM 325aL.

CHEM 455 Chemical Nanotechnology (4, Fa) Studies in the fundamental principles governing nanoscale materials. Structure and chemical bonding, preparative methods, and electrical, optical and magnetic properties of nanoscale materials and applications. *Prerequisite:* CHEM 453.

CHEM 463L Chemical Nanotechnology Laboratory (2, Sp) Experimental techniques in the synthesis and characterization of nanoscale materials. Emphasis on examining size-dependent properties of various nanoscale materials using spectroscopic techniques. *Prerequisite:* CHEM 453.

CHEM 465L Chemical Instrumentation (4, Fa) Principles of operation of instruments used in physical sciences. Basic electronics, interconnection of building blocks, data acquisition and data reduction, noise, instrument systems. Lecture, 2 hours; laboratory, 6 hours. *Prerequisite:* CHEM 332L or CHEM 430b.

CHEM 467L Advanced Chemical Biology Laboratory (2, Fa) Principles, methods and protocols of chemical biology through experimentation focusing on the interactions of small molecules with bio-macromolecules such as proteins and DNA. *Prerequisite:* CHEM 322b or CHEM 325b; *corequisite:* CHEM 300.

CHEM 488 Introduction to Theory and Practice of X-ray Crystallography (4, Fa) Introduction to single crystal X-ray diffraction theory and its extension to two-dimensional diffraction. Application of modern instrumentation and software techniques to problems of current chemical interest. *Prerequisite:* CHEM 300; CHEM 322a or CHEM 325a; and CHEM 322b or CHEM 325b.

CHEM 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

CHEM 494x Advanced Research Experience (2, 4, max 4, FaSpSm) Directed undergraduate research supervised by faculty, with advanced capstone research experience. Not available for credit to graduate students. *Prerequisite:* CHEM 490.

CHEM 499 Special Topics (2-4, max 8) Lectures and discussions on specialized topics in chemistry. *Prerequisite:* CHEM 300L; CHEM 322abL or CHEM 325abL.

CHEM 510x Alternative Energy Technologies and Options (4) Introduce the essential scientific background to understand complex issues involving energy use and its environmental consequences. Critically analyze energy issues that will shape policy decisions. Not available for credit for doctoral students in chemistry.

CHEM 515 Structure and Bonding in Inorganic and Organometallic Chemistry (4) An integrated core course of structure and bonding in inorganic, coordination and organometallic chemistry within an oxidation state framework. Symmetry, electronic properties.

CHEM 516 Synthesis, Reactivity, and Mechanism in Inorganic and Organometallic Chemistry (4) A reactivity framework for inorganic and organometallic chemistry. Synthesis, reaction mechanisms and energetics. Homogeneous catalysis. *Prerequisite:* CHEM 515.

CHEM 519 Biochemistry and Molecular Biology: An Introduction for Chemists (4) Amino acids and peptides; protein structure and function; enzyme kinetics; structure, analysis and synthesis of nucleic acids; chemical biology of DNA and RNA; biotechnology.

CHEM 521 Basic Principles of Physical Methods in Biochemistry (2) Principles underlying physical analytical methods commonly utilized in research in biochemistry and molecular biology.

CHEM 524 Inorganic Materials Chemistry (2) Studies in the fundamental principles governing inorganic materials. Structure and chemical bonding, preparative methods, and electrical, optical and magnetic properties of inorganic materials and applications. *Prerequisite:* CHEM 515.

CHEM 526 Structure and Mechanism in Organic Chemistry (4) Review of modern structural theory of organic chemistry; and relation to the mechanisms of organic chemical reactions.

CHEM 527 Synthetic Organic Chemistry (4) A survey of representative groups of widely used synthetic organic reactions; emphasis on scope, limitations, and stereochemical consequences.

CHEM 535 Introduction to Molecular Spectroscopy (4) Theory and experimental methods of molecular spectroscopy and applications to chemistry. Rotational, vibrational, electronic and nuclear magnetic resonance spectroscopies. *Prerequisite:* CHEM 544.

CHEM 536 Molecular Dynamics (2 or 4) Potential energy surfaces, reaction dynamics, scattering theories, classical trajectories, statistical theories, molecular energy transfer, photodissociation dynamics, gas-surface interactions, experimental results, beam and laser techniques.

CHEM 538 Mathematical Techniques of Physical Chemistry (4) Fundamentals and techniques of mathematics and physics. Linear algebra, differential equations, mechanics, electricity and magnetism. Applications to physical chemistry/chemical physics.

CHEM 539 Surface Chemistry (4) Physical and chemical properties of solid surfaces; thermodynamics and kinetics of gas chemisorption; chemical bonding at surfaces; applications to catalysis and electronic materials.

CHEM 540 Introduction to Statistical Mechanics (4) Study of macroscopic systems from molecular viewpoint using statistical mechanics: ensembles, fluctuations, gases, gas-solid interfaces, crystals, polymers, critical phenomena, non-equilibrium systems.

CHEM 544 Introduction to Quantum Chemistry (4) Basic principles of quantum mechanics and their application to chemistry. Electronic structure of atoms and molecules.

CHEM 545 Theory and Practice of Molecular Electronic Structure (4) Provide working knowledge and hands-on experience in current quantum chemical methods for chemists who would like to employ these techniques in their own research. *Prerequisite:* CHEM 538, CHEM 544.

CHEM 548 Computer Simulations of Chemical and Biological Systems (4) Key aspects of the rapidly growing field of computer simulation of molecular systems in general and biological molecules in particular. *Recommended preparation:* undergraduate course in physical chemistry or equivalent.

CHEM 550 Special Topics in Chemical Physics (2-4, max 8) Study of selected areas of chemical physics. Critical evaluation of recent advances in the field.

CHEM 555 Computational Quantum Chemistry: Methods and Applications (4) Introduction to modern computational quantum chemistry. Prediction of molecular structure, molecular spectra and molecular reaction mechanisms using *ab initio* and semi-empirical methods. *Prerequisite:* CHEM 430b; *recommended preparation:* CHEM 544.

CHEM 561 Polymer Synthesis (4) Concepts of polymer structure and stereochemistry. Organic chemistry of polymerization reactions with emphasis on condensation, radical, cationic, anionic, and coordination-metathesis polymerization.

CHEM 565L Advanced Practical Nuclear Magnetic Resonance Spectroscopy (2) Application of multi-dimensional and time resolved NMR spectroscopy to problems in structure determination and thermochemistry. *Prerequisite:* CHEM 322b or CHEM 325b; *recommended preparation:* CHEM 625.

CHEM 570 Seminar in Chemical Biology (2, max 4) Introduce students to emerging research areas in chemical biology through a thorough discussion of seminal research articles and presentations of current research topics. *Recommended preparation:* some research experience and familiarity with literature search.

CHEM 575 Modern Trends in Physical Chemistry (2) Emerging research areas in physical and theoretical chemistry through a thorough discussion of seminal research articles and presentations of current research topics. *Recommended preparation:* some research experience and familiarity with literature search.

CHEM 577ab Medicinal Chemistry and Drug Design (2-2) *a:* Introduction to fundamentals of medicinal chemistry with special attention to the drug discovery process. *Recommended preparation:* PSCI 664 and CHEM 519. *b:* Concepts, methods and examples of current approaches to drug design including computer-based molecular modeling techniques. *Recommended preparation:* PSCI 664.

CHEM 580 Current Topics in Inorganic Chemistry and Nanoscience (2, max 4) Introduction to emerging research areas in inorganic chemistry and nanoscience through a discussion of seminal research articles and presentations of current research topics.

CHEM 588ab X-ray Crystallography (2-2) *a:* Single-crystal X-ray diffraction theory and experimental methods. *b:* Application of diffraction techniques to problems of current chemical and biological interest. *Prerequisite:* CHEM 588a before *b*.

CHEM 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

CHEM 593 Practicum in Teaching the Liberal Arts (2, FaSp) (Enroll in MDA 593)

CHEM 594abz Master's Thesis (2-2-0, FaSpSm) Credit on acceptance of thesis. Graded IP/CR/NC.

CHEM 599 Special Topics (2-4, max 8) Special topics in chemistry.

CHEM 625 Chemical Applications of Magnetic Resonance Spectroscopy (4) Elementary theory of magnetic resonance spectroscopy, methods of spectral analysis, treatment of Fourier Transform methods and time dependent phenomena; recent applications in organic chemistry.

CHEM 626 Natural Products Chemistry (2) Survey of the chemistry and biogenesis of the major classes of secondary metabolites along biogenetic lines: terpenes, aceto genins, and alkaloids.

CHEM 661 Selected Topics in Polymer Synthesis (2-4, max 8) Advanced level study in selected areas of polymer synthesis. Critical evaluation of recent advances. Topic examples: ionic polymerization; stereo chemistry of polymers; silicon polymers; ladder polymers.

CHEM 790 Research (1-12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

CHEM 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC.

Classics

Taper Hall of Humanities 256

(213) 740-3676

FAX: (213) 740-7360

Email: classics@dornsife.usc.edu

dornsife.usc.edu/clas

Chair: Thomas N. Habinek, Ph.D.*

Faculty

Professors: Anthony J. Boyle, M.A.; Vincent Farenga, Ph.D.; Thomas N. Habinek, Ph.D.*; Susan Lape, Ph.D.; William G. Thalmann, Ph.D.*

Associate Professors: Daniel Richter, Ph.D.; Kevin van Bladel, Ph.D.; Ann Marie Yasin, Ph.D.

Assistant Professors: James Collins II, Ph.D.; Christelle Fischer-Bovet, Ph.D.

Professor of the Practice of Classics: Claudia Moatti, Ph.D.

Associate Professor Emerita: Jane Cody, Ph.D.

*Recipient of university-wide or college teaching award.

The curriculum of the Classics Department is designed to transmit a knowledge and an appreciation of the civilizations of the Greeks and the Romans — their languages and literatures, myths, philosophies and political thought — as well as to develop an understanding of the ways in which the classical heritage has manifested itself in later ages. Approximately one half of the department's classes are taught in English; these have to do with broad areas of civilization, including classical culture and literature. The remainder are courses in language and literature taught from the original Greek and Latin texts.

Undergraduate Degrees

The undergraduate classics major gives the student an understanding of the cultures, languages and literatures of ancient Greece, Rome and the Mediterranean world.

Classics is a broadly interdisciplinary field. Most courses focus on ancient Greece and Rome, but students in the department also study the impact of classical cultures on later societies and the interactions among various ancient cultures. USC is a member of the Intercollegiate Center for Classical Studies and the College Year in Athens program, and classics majors are encouraged to spend a semester in Rome or Athens. The classics major is also encouraged to explore courses in allied fields such as ancient philosophy, history, comparative literature, art history and archaeology.

Classics Major Requirements for the Bachelor of Arts

All classics majors are required to take the following introductory courses: CLAS 150 The Greeks and the West and CLAS 151 Civilization of Rome. In addition all majors must have completed one of the two elementary language sequences (including GR 220 or LAT 222).

All majors must take seven additional courses from the list maintained by the classics undergraduate mentor. Of these seven, at least five must be courses offered by the Classics Department (i.e., CLAS, LAT, GR) and at least six must be numbered 300 or above. In selecting courses from allied fields (anthropology, art history, comparative literature, English, history, Judaic studies, linguistics, philosophy, political science, religion [includes archaeology], gender studies), the student must work closely with the classics undergraduate mentor. Course work in departments other than classics must be approved in advance by the undergraduate mentor in order to count for major credit.

Bachelor of Arts in Interdisciplinary Archaeology

See Religion, page 460xx, for a complete listing.

Classics Minor

The classics department minor requires one language course at the 100-level or above.

One course from either A or B:

A.		
CLAS 150	The Greeks and the West	4
CLAS 151	Civilization of Rome	4
CLAS 280	Classical Mythology	4
B.		
Second and third semester Latin or Greek courses:		
GR 150	Greek II	4
GR 220	Greek III	4
LAT 150	Latin II	4
LAT 222	Latin III	4

Four upper-division courses (16 units) drawn from classics course offerings in classics, Latin or Greek

Total: 6 courses

Minor in Critical Approaches to Leadership

See the Department of Interdisciplinary Studies, page 375xx, for course requirements.

Honors Program

Candidates for the B.A. in classics can receive an honors degree by meeting these requirements: a 3.5 GPA in department courses at the time of graduation; completion of an honors research project under the guidance of a faculty member (CLAS 495x). Admission to the program is granted by the departmental undergraduate adviser in the semester preceding enrollment in CLAS 495x; students should have a 3.5 GPA in the major at this time.

Students Anticipating Graduate Study in Classics

Students interested in attending graduate school in classics are advised to take as many courses in Greek and/or Latin as possible.

Advisement

Because of the great flexibility built into the classics major, students are required to have their course schedule approved by the undergraduate adviser every semester. Students must have a total of 32 upper-division units (8 four-unit courses) to graduate at USC

and 24 upper-division units (6 four-unit courses) in their major.

Graduate Degrees

The graduate program in classics at USC aims to train students to become scholars, teachers and interpreters of ancient Mediterranean civilizations, of the Greek and Latin languages and literatures, and of the traditions that have developed from them. In order to prepare students to work in a variety of intellectual contexts, the department seeks to provide both a traditional substantive training in classical philology and the intellectual flexibility that will enable them to make the accomplishments of the past available to audiences of the present.

The department offers the Ph.D. in Classics (Greek and Latin) and the M.A. in Greek, Latin and Classics. Colateral offerings are available in related departments, such as comparative literature, history, philosophy, art history, English and anthropology.

The graduate program offers mastery of traditional philological and linguistic skills as a basis for the study of ancient cultures, with emphasis on literature, other discursive practices and material culture. Students are encouraged to explore interdisciplinary approaches to classical studies and the relations between classics and other fields. Courses in related departments are recommended and degree requirements permit students to develop individual interests.

Admission Requirements

An applicant for admission will normally have an undergraduate major in classics, but programs may be arranged for promising students who do not. The student should have an undergraduate record satisfactory to the department. At least three letters of recommendation from the student's undergraduate teachers should be sent to the chair of the department. All applicants are required to take the verbal and quantitative general tests of the Graduate Record Examinations. See the department Website for detailed application instructions.

Degree Requirements

These degrees are under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue (page 97xx) for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School.

Master of Arts in Classics

The department does not accept applicants for a Master of Arts degree in classics. The M.A. degree is intended only as a transitional degree in the process of completing requirements for the Ph.D. in classics.

Work toward the M.A. consists of six 4-unit courses (24 units) and a thesis and oral defense, or the M.A. comprehensive examination. Two of the core seminars are required and five of the six courses must be taken in the Department of Classics. Under the guidance of a faculty committee, the student elects those courses appropriate to individual areas of special interest and previous academic preparation.

Doctor of Philosophy in Classics

Application deadline: January 1

Sixty units of course work are required. Of these ordinarily at least 48 will be taken in the Department of Classics. Course work, exam and individual research projects are organized into a three-year cycle of 12 core courses. The final two years of the five-year program are reserved for dissertation preparation. At the end of each of the first three years a student will sit for a portion of the preliminary examinations, with all preliminary exams to be completed by the end of the third year. In addition, at the end of each of the first three years students present before a jury of internal and external examiners an individual research project. A substantial dissertation prospectus will be submitted within six months of the completion of course work, and an oral examination conducted by the student's five-member qualifying exam committee will be based on the prospectus.

The core program is as follows, and a student may enter at any time in the three-year sequence.

GREEK YEAR		UNITS
CLAS 540	Seminar in Early Greek Literature	4
CLAS 545	Seminar in Theoretical Approaches to Greek Culture and Literature	4
CLAS 550	Seminar in Classical and Hellenistic Literature	4
CLAS 555	Seminar in Greek History, Culture, and Society	4
LATIN YEAR		UNITS
CLAS 560	Seminar in Republican Latin Literature	4
CLAS 565	Seminar in Theoretical Approaches to Roman Culture and Literature	4
CLAS 570	Seminar in Imperial Latin Literature	4
CLAS 575	Seminar in Roman History, Culture, and Society	4
THEORY, SKILLS, METHODS YEAR		UNITS
CLAS 510	Seminar in Classical Philology	4
CLAS 515	Topics in Classical Scholarship	4
CLAS 520	Approaches to Antiquity	4
CLAS 525	Studies in Ancient and Pre-Modern Cultures	4

Courses of Instruction**CLASSICS (CLAS)**

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

Knowledge of Greek or Latin not required for courses numbered 499 and below.

CLAS 101g The Ancient World (4, FaSpSm) (Enroll in HIST 101g)

CLAS 150g The Greeks and the West (4, Fa) A historical and cultural survey of ancient Greece, 1100–300 BCE. Emphasis will be on the reading and interpretation of literary texts, with extensive use of visual matter.

CLAS 151g Civilization of Rome (4, Sp) Studies of Roman civilization through the major literary works of ancient Rome. All reading in translation.

CLAS 202 Introduction to Archaeology (4) (Enroll in ANTH 202)

CLAS 212L Archaeology: Interpreting the Past (4, Sp) Methods and techniques employed in modern archaeological research, including the tools and principles of allied scientific fields and the impact of analytical and technological advances.

CLAS 280g Classical Mythology (4, FaSp) Origin, development, and transmission of mythology in Greek and Latin literature, with parallels from other traditions.

CLAS 300 Women in Antiquity (4) Theoretical approaches to women's history; evidence for the daily life, legal status, and religion of ancient Greek and Roman women; the female in literature and art.

CLAS 301abcd Cross Registration with UCLA (2½-2½-2½-2½)

CLAS 305 Roman Law (4) History and elements of Roman law, including persons, property, obligations, and inheritance, in context of social structure (family, gender, class, slavery, empire). *Recommended preparation:* CLAS 151 or HIST 101.

CLAS 310 Pagans and Christians (4) The Christian reception and transformation of pagan religious and philosophical thought.

CLAS 315 Sport and Spectacle in the Ancient World (4, FaSp) The role of athletic training and competition in ancient society, from the Greek Olympic games to Roman gladiatorial combat and modern recreations.

CLAS 320gm Diversity and the Classical Western Tradition (4, Sp) Political, ethical, and ideological aspects of classical Western attitudes towards human diversity. Relationship between classical tradition and contemporary discussions of diversity and unity.

CLAS 321 Greek Art and Archaeology (4, Fa) (Enroll in AHIS 321)

CLAS 322 Roman Art and Archaeology (4, Sp) (Enroll in AHIS 322)

CLAS 323 Aegean Archaeology (4, FaSp) Survey of the Bronze Age Aegean societies of Minoan Crete and Mycenaean Greece; emphasis on archaeological theory and method in a prehistoric context.

CLAS 324 Late Antique Art and Archaeology (4) Investigation of the transformation between classical antiquity and the middle ages through examination of cities, buildings, images and artifacts of the 3rd–8th-century Mediterranean.

CLAS 325 Ancient Epic (4) Representative epics of the Greek and Roman world; development of the character of the hero; later influences.

CLAS 328 Archaeology of Religion in the Greco-Roman World (4) Examination of ancient objects, images and archaeological sites as evidence for religious practice and ideas about the sacred in the Greco-Roman world. *Recommended preparation:* AHIS 120, AHIS 201.

CLAS 333 Cult and City in Ancient Greece (4) Explores the relationship between civic and religious institutions in ancient Greece: city planning, warfare, mystery cults, drama, sacrifice, and women's rituals.

CLAS 337 Ancient Drama (4) Tragedies and comedies of the ancient world; later influences.

CLAS 338 Warfare, State, and Society in the Ancient World (4) War, warriors, and their relationship to politics and culture in the ancient world. Mobilization, socioeconomic status of soldiers, discipline, organization, and hierarchy. Memory of war.

CLAS 339 Ancient Science (4) Cross-cultural investigation of aims, origins, and transmission of various scientific traditions in antiquity. Relationship between science and philosophy, scientific thought and practice.

CLAS 340 Ethics and Politics in Ancient Rome (4) Introduction to ethical and political thought of classical Roman writers. Relationship between theory and practice. Implications for contemporary society. *Recommended preparation:* Basic familiarity with Roman history.

CLAS 348 The Athenian Century (4) Democratic concepts and values of fifth century B.C. Athens utilizing rhetorical, historical, dramatic, and biographical sources.

CLAS 349g Ancient Empires (4, FaSpSm) History and cultures of the ancient empires of southwest Asia, from Cyrus the Great to the establishment of Islam. (Duplicates credit in former CLAS 149g.)

CLAS 360 Classical Arabic Literature in Translation (4, Irregular) Introduction to Classical Arabic literature and culture of the period 500 to 1500 A.D. Focus on continuity of ancient traditions in Arabic. In English translation.

CLAS 370 Leaders and Communities: Classical Models (4, FaSp) Examination of political and moral leadership in classical republican, democratic, and imperial communities; consideration of how these models are useful to contemporary democracies.

CLAS 375 Alexander the Great: Leadership, Personality and World Conquest (4) Ancient sources on Alexander's life, personality and conquests. Modern evaluations of his achievements as a prototype for autocracy and empire-building from antiquity to today.

CLAS 378 Ptolemaic Egypt (4) Social, cultural, and political history of Egypt from Alexander to Cleopatra; state formation; immigration and cultural interaction between ethnic groups.

CLAS 380 Approaches to Myth (4) Advanced study of uses and interpretations of myth. Approaches include myth and ritual; psychology; gender; myth in literature, film and art. *Recommended preparation:* CLAS 280.

CLAS 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

CLAS 401abcd Cross Registration with UCLA (2½-2½-2½-2½)

CLAS 415 Object-Worlds: Histories and Theories of Things (4) (Enroll in AHIS 415)

CLAS 425 Interdisciplinary Studies in Classical Art and Archaeology: Research and Methodology (4, max 8, Irregular) (Enroll in AHIS 425)

CLAS 454 Classical Arabic (4, max 20, FaSp) (Enroll in MDES 454)

CLAS 461 Topics in Ancient Iranian Languages and Cultures (4, max 20) (Enroll in MDES 461)

CLAS 465 Archaeology and Society (4) The interaction of archaeology and contemporary societies through political and moral claims; archaeologists' role as stewards and interpreters of ancient cultures and their remains. Capstone course for the Interdisciplinary Archaeology major. *Recommended preparation:* background in archaeology, classics, or related field.

CLAS 470 Democracies Ancient and Modern (4) Democratic and republican governments in Athens and Rome; their influence on republicanism in early modern Italy and 18th-century America; their relevance for contemporary democracies.

CLAS 485 Comparative Grammar of Greek and Latin (4) A systematic comparative and historical linguistic study of the phonological, morphological and syntactic components of the grammars of the ancient Greek and Latin languages.

CLAS 490x Directed Research (1-8, max 12) Individual research and readings. Not available for graduate credit.

CLAS 495x Honors Research (4) Individual research for honors in the major leading to a substantial paper or other project. Not open to graduate students.

CLAS 499 Special Topics (2-4, max 8)

All of the following courses require a knowledge of Greek or Latin.

CLAS 500 Proseminar (2, Sp) Introduction to classical scholarship; research methods; bibliography.

CLAS 501abcd Cross Registration with UCLA (2½-2½-2½-2½) Special studies in selected areas of classical civilization and literature.

CLAS 510 Seminar in Classical Philology (4, 3 years, Fa) Close study of the Greek and Latin languages and linguistic theory.

CLAS 511 Sanskrit I (4) Introduces the student to the fundamentals of Sanskrit grammar, the ancient Indo-European language most closely related to Greek.

CLAS 512 Sanskrit II (4) Completes the acquisition of the fundamentals of Sanskrit grammar and enables the student to read a variety of Vedic and classical Sanskrit texts.

CLAS 515 Topics in Classical Scholarship (4, 3 years, Fa) Intensive study of individual authors, genres, periods, or areas of classical scholarship.

CLAS 520 Approaches to Antiquity (4, 3 years, Sp) Study in the history and theory of classical scholarship.

CLAS 525 Studies in Ancient and Pre-Modern Cultures (4, 3 years, Sp) Investigation of cultural interaction among Greeks, Romans and other ancient peoples. Includes a comparative study of pre-modern cultures.

CLAS 540 Seminar in Early Greek Literature (4, 3 years, Fa) Homer through Aeschylus.

CLAS 545 Seminar in Theoretical Approaches to Greek Culture and Literature (4, 3 years, Fa) Introduces students to the study of Greek culture and to the range of theories useful for modeling that culture and its literature.

CLAS 550 Seminar in Classical and Hellenistic Literature (4, 3 years, Sp) Tragic poetry, comic poetry, Hellenistic poetry.

CLAS 555 Seminar in Greek History, Culture, and Society (4, 3 years, Sp) Develops a historical framework for Greek culture from the Mycenaean period through the Hellenistic world. Emphasis on prose texts: historians, philosophers, orators.

CLAS 560 Seminar in Republican Latin Literature (4, 3 years, Fa) Early Latin literature through Virgil.

CLAS 565 Seminar in Theoretical Approaches to Roman Culture and Literature (4, 3 years, Fa) Introduces students to the study of Roman culture and to a range of theories useful for modeling that culture and its literature.

CLAS 570 Seminar in Imperial Latin Literature (4, 3 years, Sp) Latin literature from the Augustan period to that of the Antonines.

CLAS 575 Seminar in Roman History, Culture, and Society (4, 3 years, Sp) Introduces students to research in Roman history and historiography.

CLAS 590 Directed Research (1-12, FaSp) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

CLAS 593 Practicum in Teaching the Liberal Arts (2, FaSp) (Enroll in MDA 593)

CLAS 594abz Master's Thesis (2-2-0, FaSp) Credit on acceptance of thesis. Graded IP/CR/NC.

CLAS 599 Special Topics (2-4, max 8, FaSpSm) Special topics in classical language, literature and culture.

CLAS 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

CLAS 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSp) Credit on acceptance of dissertation. Graded IP/CR/NC.

GREEK (GR)

GR 120 Greek I (4, FaSp) Essentials of classical Greek grammar and vocabulary.

GR 150 Greek II (4, FaSp) Essentials of classical Greek grammar and vocabulary, continued. Basic reading skills. *Prerequisite:* GR 120.

GR 220 Greek III (4, FaSp) Reading Greek literature. Introduction to reading and translation of classical Greek prose and poetry. Extensive grammar review. *Prerequisite:* GR 150.

GR 321 Greek Art and Archaeology (4, Fa) (Enroll in AHIS 321)

GR 322 Roman Art and Archaeology (4, Fa) (Enroll in AHIS 322)

GR 328 Archaeology of Religion in the Greco-Roman World (4) Examination of ancient objects, images and archaeological sites as evidence for religious practice and ideas about the sacred in the Greco-Roman world. *Recommended preparation:* AHIS 120, AHIS 201. Cross-listed as REL 328.

GR 339 Ancient Science (4) Cross-cultural investigation of aims, origins, and transmission of various scientific traditions in antiquity. Relationship between science and philosophy, scientific thought and practice.

GR 345 Greek Tragic Poets (4) Selected plays of Aeschylus, Sophocles, and Euripides.

GR 353 Plato (4) Readings from the Republic or other dialogues.

GR 354 Greek Historians (4) Selections from such representative historians as Herodotus and Thucydides.

GR 355 Aristophanes (4) A study of at least three comedies.

GR 362 Homer and the Greek Epic (4) Selections from the *Iliad* and/or *Odyssey*. Problems of oral composition and transmission.

GR 365 Greek Lyric Poetry (4) Readings from Archilochus, Sappho, Alcaeus, Pindar, and other lyric poets. *Prerequisite:* GR 220.

GR 375 Plutarch (4) Readings of selected works by the Greek author Plutarch. *Prerequisite:* GR 220.

GR 390 Special Problems (1–4, FaSp) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

GR 425 Interdisciplinary Studies in Classical Art and Archaeology: Research and Methodology (4, max 8, Irregular) (Enroll in AHIS 425)

GR 450 Readings in Greek Literature (4, max 12) Readings in various authors and genres of Greek literature. *Prerequisite:* 300-level Greek course.

GR 490x Directed Research (1–8, max 12, FaSp) Individual research and readings. Not available for graduate credit.

GR 499 Special Topics (2–4, max 8)

LATIN (LAT)

LAT 020x Latin for Research (2) For students who wish to use Latin in their research, or who need help in meeting the reading requirement for the Ph.D. Not available for degree credit.

LAT 120 Latin I (4, FaSp) Essentials of Latin grammar and vocabulary.

LAT 150 Latin II (4, FaSp) Essentials of Latin grammar and vocabulary, continued. Basic reading skills. *Prerequisite:* LAT 120.

LAT 222 Latin III (4, FaSp) Reading Latin literature. Introduction to reading and translation of classical Latin prose and poetry. Extensive grammar review. *Prerequisite:* LAT 150.

LAT 310 Latin Elegiac Poetry (4, Irregular) Selected poems of Catullus, Tibullus, Propertius, and Ovid; meter, style, and themes. *Prerequisite:* LAT 313, LAT 314, LAT 315, or LAT 316.

LAT 312 Roman Satire (4, Irregular) Selected satires of Horace and Juvenal; history of the genre.

LAT 313 Ovid and Classical Mythology (4) Selections from the *Metamorphoses* and *Fasti*; collateral reading on classical mythology.

LAT 314 Catullus and Horace (4) Selected poems of Catullus and Odes of Horace.

LAT 315 Cicero (4) Representative philosophical, oratorical, and rhetorical works; selected letters.

LAT 316 Roman Comedy (4) Selected plays of Plautus and Terence.

LAT 320 Vergil (4) Studies in the *Aeneid* or *Eclogues* and *Georgics*.

LAT 322 Lucretius' *De Rerum Natura* (4) The didactic epic as a vehicle of Epicurean philosophy.

LAT 325 Roman Historians (4) Readings from Sallust, Livy, and Tacitus. *Prerequisite:* LAT 222 or satisfactory completion of placement test.

LAT 365 Latin Literature of the Silver Age (4) Readings in Seneca, Martial, Pliny, and other representative writers.

LAT 385 Late and Medieval Latin (4) Selections from poets and prose writers from late antiquity to the 15th century.

LAT 390 Special Problems (1–4, FaSp) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

LAT 450 Readings in Latin Literature (4, max 12, FaSp) Readings in various authors and genres of Latin literature. *Prerequisite:* 300-level Latin course.

LAT 490x Directed Research (1–8, max 12, FaSp) Individual research and readings. Not available for graduate credit.

LAT 499 Special Topics (2–4, max 8)

Comparative Literature

Taper Hall of Humanities 161
(213) 740-0102
FAX: (213) 740-8058
Email: complit@dornsife.usc.edu
dornsife.usc.edu/colt
Chair: Panivong Norindr, Ph.D.

Faculty

Marion Frances Chevalier Professor of French: Peggy Kamuf, Ph.D.* (*French and Italian*)

Professors: Dominic C.N. Cheung, Ph.D. (*East Asian Languages and Cultures*); Vincent Farenga, Ph.D.* (*Classics*); Akira Mizuta Lippit, Ph.D. (*Critical Studies and East Asian Languages and Cultures*); Hilary M. Schor, Ph.D. (*English and Law*); William G. Thalmann, Ph.D.* (*Classics*); Daniel Tiffany, Ph.D. (*English*)

Associate Professors: Roberto Ignacio Díaz, Ph.D.* (*Spanish and Portuguese*); Erin Graff Zivin, Ph.D. (*Spanish and Portuguese*); Heather James, Ph.D. (*English*); Natania Meeker, Ph.D. (*French and Italian*); Panivong Norindr, Ph.D. (*French and Italian*); Antonia Szabari, Ph.D. (*French and Italian*)

Assistant Professor: Neetu Khanna, Ph.D.

Adjunct Assistant Professor: Dan Leshem, Ph.D. (*USC Shoah Foundation Institute for Visual History and Education*)

Associate Professor (Teaching): Michael du Plessis, Ph.D.

Emeritus Professors: Gloria Orenstein, Ph.D.; Albert Sonnenfeld, Ph.D.* (*French and Italian*)

Associated Faculty

Professors: Joseph A. Boone, Ph.D. (*English*); David E. James, Ph.D. (*Cinematic Arts*); Tania Modleski, Ph.D. (*English*); David St. John, M.F.A. (*English*); Alexander Zholkovsky, Ph.D. (*Slavic Languages and Literatures*)

Associate Professors: David Bialock, Ph.D. (*East Asian Languages and Cultures*); Margaret Rosenthal, Ph.D.* (*French and Italian*)

*Recipient of university-wide or college teaching award.

Degree Programs

The Comparative Literature Department offers the B.A. and minor in cross-linguistic and cross-cultural literary studies, including the study of various literary genres,

periods and movements; literary theory; and interdisciplinary approaches to literature. The literatures and cultures represented in the department include: Western (European and American) and East Asian.

For M.A. and Ph.D. programs, see the Comparative Studies in Literature and Culture Department, page 307xx.

Undergraduate Degrees

Comparative Literature Major

Students may earn the B.A. in Comparative Literature by satisfying the requirements for either of two tracks. The *Literature/Media/Critical Thought Track* allows students to focus their study in one of three concentrations while also taking courses in the other two. Together, these three concentrations represent the broad range of interests in the discipline: (1) literature considered comparatively and transnationally; (2) the media of other arts and modes of communication (photography, film, music, painting and digital media); (3) modes of critical thought that inform and shape theoretical reflection on the arts and society.

This track offers the opportunity to pursue a major that is broadly based in the liberal arts. Students on this track might consider extending their concentration with

a double major or minor. For example, the literature concentration could be extended with a second major or minor in a national literature (French, Spanish, Italian, Russian, English, classics or an East Asian literature); the media concentration by another major or minor in cinematic arts, art history or communication; and the critical thought concentration by a second major or minor in philosophy, religion, history, sociology or anthropology.

The Foreign Language Track incorporates the study of at least one literature in a foreign language into the comparative perspective of the comparative literature major.

Students who intend to pursue a graduate degree in either comparative literature or a foreign literature are strongly advised to choose this track, as are students who already possess advanced skills in a language other than English. Majors in comparative literature with foreign language emphasis might consider a double major or a minor in a department of foreign language or in a non-literary field such as international relations or journalism.

The requirements for both tracks of the major accommodate very well semesters of study abroad. Students are helped and encouraged to plan their programs in advance to allow for that experience.

Requirements for the Major

Literature/Media/Critical Thought Track

Students earn a B.A. in Comparative Literature and are required to complete at least 40 units (10 courses) as follows:

- (1) COLT 302 and COLT 303
- (2) At least four additional COLT courses in one of the three concentrations.

Literature Concentration:

CLAS 360, COLT 101, COLT 102, COLT 250, COLT 251, COLT 264, COLT 311, COLT 312, COLT 324, COLT 335, COLT 345, COLT 346, COLT 348, COLT 351, COLT 374, COLT 382, COLT 420, COLT 426, COLT 435, COLT 445, COLT 448, COLT 472, COLT 475, COLT 476, COLT 485, EALC 454, EALC 460

Media Concentration:

COLT 354, COLT 357, COLT 365, COLT 373, COLT 379, COLT 451, COLT 452, COLT 462, COLT 470, COLT 480

Critical Thought Concentration:

CLAS 370, COLT 375, COLT 377, COLT 381, COLT 385, COLT 391, COLT 454, COLT 471, COLT 474, COLT 476, COLT 478, COLT 486, COLT 487

- (3) At least four additional COLT courses. No more than two of the 10 courses required for the major may be at the 100 or 200 level.

Foreign Language Track

Students earn a B.A. in Comparative Literature and are required to complete 40 units (10 courses) as follows:

- (1) COLT 302 and COLT 303
- (2) At least five additional COLT courses, of which no more than two may be at the 100 or 200 level.
- (3) At least three upper-division courses in the literature or culture of one or more foreign languages (other than English), with all readings in that language.

Honors Program

Students who satisfy the following requirements of the honors program receive the B.A. in Comparative Literature with Honors. To be admissible to the honors program, an overall GPA of at least 3.0 and at least 3.5 in courses counted for major credit is required. The decision to enter the Honors Program should be made and discussed with the departmental undergraduate adviser at least one year (two semesters) before graduation.

To be awarded honors, majors in comparative literature on the literature/media/critical thought track must complete 4 units of COLT 490x Directed Research and 4 units of COLT 495 Senior Honors Thesis. These courses replace two of the COLT courses required beyond the four-course concentration. Majors in comparative literature on the foreign language track must complete, in place of two of the five required COLT courses, an additional upper-division course in the literature or culture of a language other than English and COLT 495 Senior Honors Thesis.

The director of the senior honors thesis must be a member of the comparative literature faculty. The second reader may be any regular USC faculty. To qualify for the award of honors, the director and second reader must both approve the thesis.

Minor in Comparative Literature

Students can minor in one of three tracks: the literature/media/critical thought track, the foreign language track or the global cultures track.

Literature/Media/Critical Thought Track

Students are required to complete at least 24 units (six courses) as follows:

- (1) COLT 302 and COLT 303
- (2) At least three additional COLT courses in one of the three concentrations.
- (3) At least one additional COLT course in any of the three concentrations.

No more than one of the six courses required for the minor may be at the 100 or 200 level.

Foreign Language Track

Students are required to complete at least 24 units (six courses) as follows:

- (1) COLT 302 and COLT 303
- (2) At least three additional COLT courses, of which no more than one may be at the 100 or 200 level.
- (3) At least one upper-division course in the literature or culture of a foreign language (other than English), with all readings in that language.

Global Cultures Track

Students are required to complete at least 24 units (six courses) as follows:

- (1) COLT 302 and COLT 303
- (2) At least two additional COLT courses, of which no more than one may be at the 100 or 200 level, to be chosen from the following list: COLT 101, COLT 102, COLT 250, COLT 264, COLT 360, COLT 374, COLT 375, COLT 379, COLT 385, COLT 445, COLT 448, COLT 470, COLT 474

- (3) At least two other courses in a relevant USC College department to be decided in conjunction with the adviser according to the following guidelines:

- A. Students may choose a region of the world and take two upper-division courses related to that region in relevant departments.
- B. Students may choose a national/linguistic tradition and take two upper-division courses related to that tradition in relevant departments.

Graduate Degrees

The M.A. and Ph.D. in comparative literature are offered through the Comparative Studies in Literature and Culture program, as described in this catalogue on page 307xx.

Courses of Instruction

COMPARATIVE LITERATURE (COLT)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

COLT 101g Masterpieces and Masterminds: Literature and Thought of the West (4, Fa) A broad introduction to the great works of Western culture from antiquity to 1800. (Duplicates credit in former COLT 150x.)

COLT 102g On Location: The Place of Literature in Global Cultures (4, Sp) Comparative study of works from a broad range of cultural traditions that originate from, and provide insight into, vital global locations outside the Western sphere.

COLT 250g Cultures of Latin America (4, Fa) Comparative study of Latin American cultures, especially vis-a-vis those of Europe and the U.S. Materials drawn from literature, but also film, opera, history, cultural theory.

COLT 251g Modern Literature and Thought of the West Since 1800 (4, SpSm) Survey of literary and other cultural texts from the 19th to the 21st centuries, with emphasis on the individual and social change. (Duplicates credit in former COLT 151x.)

COLT 264g Asian Aesthetic and Literary Traditions (4) A comparative study of the Asian aesthetic heritage of poetry, painting, music, and drama; of literary themes, trends, and myths.

COLT 302 Introduction to Literary Theory (4, Fa) Introduction to general forms of reflection on literary discourse.

COLT 303 Globalization: Culture, Change, Resistance (4, Sp) Cultural dimensions of issues in globalization: migration, diaspora, terrorism, communications, climate change, collectives, production and technology, money and exchange.

COLT 311 Epic (4) Formation and development of epic poetry from Near Eastern and Greco-Roman antiquity through the Renaissance to the present. Emphasis on relation to political and cultural change.

COLT 312 Heroes, Myths and Legends in Literature and the Arts (4) Study of transformations of characters and themes from myth, legend or fairytale (Oedipus, Antigone, Faust, Don Juan, Cinderella, Comic and Tragic Twins, Hero and Monster).

COLT 324 Women in Medieval and Renaissance Europe (4) Study of literary, social and cultural lives of women during the European Middle Ages and Renaissance. Reading and analysis of texts written by and about women.

COLT 335 Decadence and Modernity (4) Study of the notion of "decadence" and its impact on modern and contemporary literary/cultural production, with a comparatist focus on different linguistic traditions.

COLT 345 Realist Fiction (4) Study of the ways literature presents the "real" (social and/or individual) through readings of selected novels and short stories in the realist and naturalist traditions.

COLT 346 Fictions of the First Person (4) Study of prose fiction in the first person as a model of fiction in general and as a reflection of the fictional structure of selfhood.

COLT 348 Modernist Fiction (4) Study of the Modernist aesthetic in narrative texts by Gide, Joyce, Kafka, Woolf and others; possible focus on related trends in other literary traditions.

COLT 351 Modern and Contemporary Drama (4) Comparative study of major modern dramatic trends, subgenres, and techniques, through representative works from Strindberg to the Theatre of the Grotesque and the Absurd. (Duplicates credit in former COLT 305.)

COLT 354 Revolutions in Theater (4) Comparative study of groundbreaking contributions to modern theories of theater and performance in the context of other 20th century revolutions — aesthetic, cultural, and social.

COLT 357 The Avant-Garde (4, max 8) Study of the relationship between literary modes and other arts since 1900, focusing on particular avant-garde movements.

COLT 360 Classical Arabic Literature in Translation (4, Irregular) (Enroll in CLAS 360)

COLT 365 Literature and Popular Culture (4) Study of mass-reproduced verbal and visual art forms, such as graphic novels, comics, animation, popular music, video, graffiti, advertising.

COLT 370 Leaders and Communities: Classical Models (4, FaSp) (Enroll in CLAS 370)

COLT 373 Literature and Film (4) Examines literature and film as distinct modes of representation, narration, and structuring of time, language, memory, and visibility.

COLT 374gm Women Writers in Europe and America (4, Sp) Introduction to works of major women writers from the Middle Ages to the 20th century in their literary, social, and cultural contexts.

COLT 375 Latin American Cultural and Literary Theory (4) Survey of cultural critique focused on Latin America as a cultural region and on Latin Americanism as a transnational academic practice.

COLT 377 Literature, Theory, Gender (4) Literary representations and theories of gender difference. Examines questions of gendered voice in writing and the cultural construction of gender in various periods and cultures.

COLT 379 Nationalism and Postcolonialism in Southeast Asian Cinema (4) Cinema from Cambodia, Indonesia, Laos, Malaysia, the Philippines, Singapore, Thailand, and Vietnam in local and global cultural contexts.

COLT 381 Psychoanalysis and the Arts (4) Introduction to psychoanalytic literature on the arts, including classic texts by Freud, Jones, Lacan, Derrida, and others. Readings of theoretical and fictional works.

COLT 382g Zen and Taoism in Asian Literature (4) Studies of the presence and influence of Zen Buddhism and Taoism in Asian literature, with a focus on China and Japan.

COLT 385 Literature and Justice (4) Examination of literary and autobiographical texts that raise questions of justice in multicultural societies; links to theories of justice in historical, political, or philosophical contexts.

COLT 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

COLT 391 Literary Criticism from Plato to Postmodernism (4) Survey of major texts in the literary criticism of the West from the Greeks to postmodern theories.

COLT 420 The Fantastic (4) Representative works from the "fantastic" and related currents within the European, U.S., and Spanish American traditions; reading of texts by authors such as Borges, Cortazar, Kafka, and Poe. Discussion of relevant theoretical concepts and critical works.

COLT 426 Utopias (4) Examination of selected utopias in their historical context as "no places" whose projections of alternate cultures always comment on their own.

COLT 435 Poetry and Poetics of the Everyday (4) Relations between poetry of the dominant tradition in various languages and vernacular forms of poetry, such as riddles, nursery rhymes, ballads, and poems in dialect or slang.

COLT 445 Europe and the Writing of Others (4) Analysis of European texts — literary, musical, philosophical, visual — that focus on other cultures, as well as of non-European texts dealing with Europe or European cultural forms.

COLT 448 Multilingual Encounters (4) Exploration of multilingual encounters in literary works, films, and theoretical texts. Topics may include immigrant languages, dialects, jargons, imaginary or hybrid languages, theories of translation.

COLT 449 Dante (4) (Enroll in ITAL 450)

COLT 451 Opera and Cultural Theory (4) Study of the words and plots of operas from the viewpoint of gender, postcolonial, and psychoanalytical theory. Special attention to contemporary stagings and film versions.

COLT 452 Representation and Cognition in Photography (4) Analysis of documentary photo-representation in its historical context through study of the work of selected 20th century documentary photographers and of pertinent critical writings.

COLT 453 Bildungsroman in Modern East Asia (4, Sp) (Enroll in EALC 454)

COLT 454 Aesthetic Philosophy and Theory (4) Introduction to philosophical and critical writings on the nature of art and aesthetic experience. Special attention to technology's impact on art.

COLT 460 Love, Self and Gender in Japanese Literature (4) (Enroll in EALC 460)

COLT 462 Soundtracks of Our Lives (4) The reciprocal, ideological relations between modes of listening, sounds, music; and literature, film, culture. Examines a range of issues in auditory culture across a broad historical span.

COLT 470 Literature and Media in Latin America (4) Study of the relations between Latin American literature and different mass-media genres.

COLT 471 Literature, Theory, History (4) Examines the relation between historical and theoretical approaches to literary works.

COLT 472 Los Angeles Crime Fiction (4) The noir tradition in books and films set in Los Angeles. Emphasis on generic conventions, representations of the city, and discourses of class, gender, race.

COLT 474 Desire, Literature, Technology (4) Relations between technology, desire, power and literature through contemporary philosophers, theorists and literary critics. Examines literature and philosophy in relation to global technological planning.

COLT 475 Politics and the Novel (4) Examination of the modern realist novel with special focus on the representation of social change (revolution, class conflict, sexual politics).

COLT 476 Narrative and the Law (4) Study of the relationship between law and narrative through Western literature, including the realist novel, medieval morality plays and Greek drama.

COLT 478 Family in Theory and Literature (4) Representations of the family in literary works and films across different cultures and historical periods. Readings in anthropology, philosophy, psychoanalysis, and feminist and gender theory.

COLT 480 Dada and Surrealism (4) A comparative study of Dada and Surrealism in literature in relation to painting, sculpture, photography and cinema.

COLT 485 The Shoah (Holocaust) in Literature and the Arts (4) A critical analysis, in their historical contexts, of representative literary, dramatic, musical and artistic works created by or about the victims of the Shoah (Holocaust).

COLT 486 Deconstructive Thought (4) Deconstructive analysis of theories of language, representation, selfhood, the human, art and technology, politics and ethics. Study of works by Derrida and others.

COLT 487 Critical Image (4) Introduction to critical reflection on the image. Analysis of criticism, fiction, film, and visual artifacts.

COLT 490x Directed Research (1–8, max 12) Individual research and readings. Not available for graduate credit. *Prerequisite:* departmental approval.

COLT 495 Senior Honors Thesis (4) Writing of an honors thesis under individual faculty supervision.

COLT 499 Special Topics (2–4, max 8) Intensive study of selected author or authors in the context of a major literary tradition.

COLT 525 Studies in Literary and Cultural History (4, max 8) Literary and cultural currents from classical antiquity through modernity. Varying focus on specific genres, periods, movements, or problematics.

COLT 545 Studies in Literature and the Other Arts (4, max 8) Study of intersections between the literary arts and music, opera, film, theatre, photography, dance, or painting.

COLT 555 Studies in Literatures of the Americas (4, max 8) Comparative study of literary currents in the U.S., Canada, Latin America, and the Caribbean.

COLT 565 Studies in Literatures of Asia (4, max 8) Study of major cultural paradigms and their divergent influences in the literatures of China, Japan, Korea, and Southeast Asia.

COLT 575 Studies in Literature and Ethnicity (4, max 8) Study of literary expression in different cultural, racial, or religious communities. Possible focus on African, Asian, Hispanic, or Jewish themes across several national traditions.

COLT 585 Studies in Literature and Gender (4, max 8) Emphasis on gender difference and sexual difference as signifying categories for literary works, criticism, or theory.

COLT 593 Practicum in Teaching the Liberal Arts (2, FaSp) (Enroll in MDA 593)

COLT 602 Seminar in Literary Theory (4, max 12) Intensive study of a theoretical tradition or critical movement, or of an individual topic or thinker, in literary criticism or theory.

COLT 620 Seminar in Literature, Culture, and Thought (4, max 12) Varying focus on social and political thought, psychoanalysis, and philosophy in relation to literary and cultural analysis.

Comparative Studies in Literature and Culture

Taper Hall of Humanities 161

(213) 740-0102

FAX: (213) 740-8058

Email: kamuf@usc.edu

Director: Peggy Kamuf, Ph.D.

Degree Programs

The Comparative Studies in Literature and Culture Department offers the M.A. and Ph.D. in three tracks: Comparative Media and Culture; Comparative Literature; and National Literatures and Cultures (French and Francophone Studies, Slavic Languages and Literatures, or Spanish and Latin American Studies).

Graduate Degrees

Comparative Studies in Literature and Culture Doctoral Program

Application deadline: December 1

Through the comparative studies in literature and culture doctoral program (CSLC), students pursue master's and doctoral degrees in one of three tracks: comparative media and culture; comparative literature; national literatures and cultures (French and Francophone Studies, Slavic Languages and Literatures, or Spanish and Latin American Studies). The three tracks share a required core curriculum.

General Admission and Application Requirements

Applications are made to CSLC for the Ph.D. in one of the three tracks.

Successful applicants will have: a B.A. in a relevant discipline; satisfactory scores in both the verbal and quantitative general test of the Graduate Record Examinations; satisfactory grades on undergraduate or previous M.A. course work and, if appropriate, a satisfactory score on the TOEFL or IELTS examination; and advanced competence in relevant languages. Applications must also include a written statement indicating the applicant's interests in the field and proposed areas of study; a sample of scholarly or critical writing on a relevant subject; and three letters of recommendation.

Although candidates are not admitted who wish to pursue solely the M.A., the degree may be awarded either as a terminal degree or as a transitional degree in the course of Ph.D. study.

General Degree Requirements

These degrees are under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section on page 86xx and the Graduate School section on page 97xx of this catalogue for general regulations. To be applied toward the degrees, courses must be accepted by the Graduate School.

Students may transfer up to 4 units toward the M.A. and 30 units toward the Ph.D.

For specific degree requirements in each track, see below.

Track I: Comparative Media and Culture

The primary goal of the track in comparative media and culture is to prepare students to engage in original research and teaching after acquiring: a broadly based

knowledge of the formal specificity and possibilities of different print, visual, sound and digital media; an understanding of the development of different media within their specific cultural and linguistic contexts; and a knowledge of the principles of criticism and theory essential to the analysis, interpretation and evaluation of individual works.

Master of Arts, Comparative Studies in Literature and Culture (Comparative Media and Culture) Course Requirements

Completion of at least eight courses (29–32 units) distributed as follows: CSLC 501, CSLC 502 and CSLC 503; one course in a non-Anglophone literary or cultural tradition (CLAS, EALC, FREN, SLL or SPAN); four additional courses in fields relating to the student's program, of which at least two are in CSLC. No more than one of these eight courses may be in directed research (CSLC 590).

First-Year Review

The program conducts a thorough review of all first-year students at the end of the second semester. To be permitted to continue doctoral work, students must receive a satisfactory evaluation in this review.

Track I Field Examination

A written exam based on a reading list must be successfully passed by all students in the track. It is normally taken at the end of the semester in which M.A. course work is completed.

Doctor of Philosophy, Comparative Studies in Literature and Culture (Comparative Media and Culture)

Course Requirements

In addition to the M.A. course requirements listed above, six additional 4-unit courses are required, distributed as follows: one of the following: COLT 602, CSLC 601 or CSLC 603; two courses in non-Anglophone literary or cultural traditions; three additional courses in CSLC or in fields related to the study of media and culture. Students will also complete the professional development sequence, CSLC 600 and CSLC 700, which are 2-unit courses and offered only as credit/no credit. No more than two of the total required courses may be in directed research (590 or 790).

Foreign Language Requirements

Students must successfully complete at least three advanced courses (400-level or higher) in the original language of a tradition other than Anglophone.

Track I Field Examination

See the requirement in the M.A. section.

Qualifying Examination

To be admitted to candidacy for the Ph.D., students must pass this examination after all course work has been completed.

Dissertation Defense

An oral defense of the dissertation must be satisfactorily completed before the dissertation can be filed with the Graduate School.

Awarding of Degree

The degree of Ph.D. in Comparative Studies in Literature and Culture (Comparative Media and Culture) is conferred when all of the degree requirements have been completed satisfactorily.

Track II: Comparative Literature

The primary goal of graduate study in the comparative literature track is to prepare students to engage in original research and teaching after acquiring: a broadly based knowledge of literature's formal or generic development extending across linguistic boundaries; an understanding of literature's historical development within a number of specific cultural or ideological contexts; and a knowledge of the principles of literary criticism and theory essential to the analysis, interpretation and evaluation of individual works. The core of the discipline of comparative literature is advanced competence in several languages allowing research in their literary traditions.

Master of Arts, Comparative Studies in Literature and Culture (Comparative Literature)

Course Requirements

Completion of at least eight courses (29–32 units) distributed as follows: CSLC 501, CSLC 502 and CSLC 503; three courses in a first literary tradition; two courses in a second literary tradition. No more than one of these eight courses may be in directed research (590).

First-year Review

The program conducts a thorough review of all first-year students at the end of the second semester. To be permitted to continue doctoral work, students must receive a satisfactory evaluation in this review.

Track II Field Examination

A written exam based on a reading list must be successfully passed by all students in the track. It is normally taken at the end of the semester in which M.A. course work is completed.

Doctor of Philosophy, Comparative Studies in Literature and Culture (Comparative Literature)

Course Requirements

In addition to the M.A. course requirements listed above, six additional 4-unit courses are required, distributed as follows: COLT 602 and two other courses in CSLC, COLT or comparative fields relating to the student's program; two additional courses in the first literary tradition; one course in a third literary tradition. Students will also complete the professional development sequence, CSLC 600 and CSLC 700, which are 2-unit courses and offered only as credit/no credit. No more than two of the total required courses may be in directed research (590 or 790).

Track II Field Examination

See the requirement in the M.A. section.

Foreign Language Requirements

Students must successfully complete at least three advanced courses (400-level or higher) in the original languages of two literary traditions other than Anglophone (two courses in one language and one in the other). Students will also complete a literary analysis exercise in their strongest non-native language outside their major literary tradition. This exercise is normally done in conjunction with the field examination.

Comparative Field Exercise

A 30–40 page paper with bibliography in a comparative field related but not central to the major literary tradition in which the student plans to write his or her dissertation is required.

Qualifying Examination

To be admitted to candidacy for the Ph.D., students must pass this examination after all course work has been completed.

Dissertation Defense

An oral defense of the dissertation must be satisfactorily completed before the dissertation can be filed with the Graduate School.

Awarding of Degree

The degree of Ph.D. in Comparative Studies in Literature and Culture (Comparative Literature) is conferred when all of the degree requirements have been completed satisfactorily.

Track III: National Literatures and Cultures French and Francophone Studies

The majority of students pursue the doctorate in comparative studies in literature and culture (French and

Francophone Studies) in preparation for a career of teaching and research at the college or university level in the field of French and Francophone literature and cultural studies. Students preparing for these careers must obtain a broad knowledge of major French and Francophone literary texts and traditions from the Middle Ages to the present, which is achieved through a combination of course work and exams. They should also develop the intellectual depth that allows them to produce an original dissertation in a timely manner.

Theme-year Curriculum

The curriculum in French rotates three year-long themes that represent the thought, literature and culture of France and the French-speaking world:

Rhétoriques (des Arts)/Rhetorics (of the Arts)

This theme year is devoted to the arts that have established and contested French and Francophone traditions: the art of writing in the French language since the *chansons de geste* and medieval *romans* up to the most innovative literary practices of the modern or postmodern age. The seminars also include study of artistic forms and practices other than the literary, such as the plastic or acoustic arts, and consider the relations between the arts and the state.

Révolutions/Revolutions

The term "Revolution" inhabits a turbulent and ambivalent space. Conjuring up first the cataclysmic upheavals of the 1789 Revolution followed by the 1830 and 1848 revolutions that transformed French society and ushered in the modern era, it also evokes other momentous revolutions in science, medicine and the arts. Seminars treat the theme of revolution as not strictly bounded by political and social concerns but as governing and pervading all facets of artistic, cultural and literary experiments.

Raison et Dérailson/Reason and Unreason

This theme year probes the double logic of reason and unreason that plays an important role in the construction of social order(s), governs inquiry in epistemology and psychology, and directs literary and artistic creation. The year's seminars examine theoretical texts in French that have also been of crucial significance for the redefinition of literary and cultural studies in the English-speaking academy, including Foucault's studies of madness, discipline and sexuality and the French tradition of psychoanalysis, exemplified by the work of Lacan, or its contestation by Deleuze and Guattari. The theme includes the early modern, modern and postmodern periods in the writings of thinkers as diverse as Montaigne and Lévi-Strauss, Sade and Irigaray, Hugo and Derrida.

Master of Arts, Comparative Studies in Literature and Culture (French and Francophone Studies)

Course Requirements

Completion of at least 8 courses (29–32 units) distributed as follows: CSLC 501, CSLC 502 and CSLC 503; two of the theme-year core courses, FREN 500, FREN 502 or FREN 511; three additional courses in French or, with permission, in a related field. No more than two of the eight courses may be at the 400 level and no more than one course may be in directed research (590).

First-year Review

The program conducts a thorough review of all first-year students at the end of the second semester. To be permitted to continue doctoral work, students must receive a satisfactory evaluation in this review.

Track III Field Examination (French)

The exam consists of the oral defense of a paper developed in consultation with a faculty adviser. It is normally taken at the end of the semester in which M.A. course work is completed.

Doctor of Philosophy, Comparative Studies in Literature and Culture (French and Francophone Studies)
Course Requirements

In addition to the M.A. course requirements listed above, at least six additional 4-unit courses are required distributed as follows: CSLC 603, and one additional course from the CSLC advanced seminar sequence (CSLC 601 or COLT 602); four additional courses in French or, with permission, courses in a related field. Students will also complete the professional development sequence, CSLC 600 and CSLC 700, which are 2-unit courses and offered only as credit/no credit. No more than two of the total required courses may be in directed research (590 or 790).

Language Requirement

The language requirement may be fulfilled either by successfully completing a course at the 400-level or above taught in a language other than French or English or by passing a reading examination in the relevant language. Students confer with the graduate adviser to decide which option is most appropriate. This requirement must be fulfilled at least 60 days before the qualifying examination.

Qualifying Examination

To be admitted to candidacy for the Ph.D., students must pass this examination after all course work has been completed.

Dissertation Defense

An oral defense of the dissertation must be satisfactorily completed before the dissertation can be filed with the Graduate School.

Awarding of Degree

The degree of Ph.D. in Comparative Studies in Literature and Culture (French and Francophone Studies) is conferred when all of the degree requirements have been completed satisfactorily.

Slavic Languages and Literatures

The doctorate in Comparative Studies in Literature and Culture (Slavic Languages and Literatures) is designed to prepare students for a career of teaching and scholarship at the university level. It provides a thorough grounding in Russian literary and cultural history as well as with the theoretical perspectives current in the field. The linguistic component of the curriculum together with the experience as a teaching assistant in Russian language courses that many students gain also serves as preparation for positions involving language teaching. Depending on departmental offerings, further

study in a second Slavic language and culture may also be possible.

Master of Arts, Comparative Studies in Literature and Culture (Slavic Languages and Literatures)
Course requirements

Completion of at least eight courses (27–29 units) distributed as follows: CSLC 501, CSLC 502 and CSLC 503; at least five courses in SLL including, for non-native speakers of Russian, 8 units of SLL 500, and for all students SLL 501, SLL 516 and either SLL 530 or SLL 532. No more than one of the eight courses may be in directed research (590).

First-year review

The program conducts a thorough review of all first-year students at the end of the second semester. To be permitted to continue doctoral work, students must receive a satisfactory evaluation in this review.

Language requirements

Non-native speakers of Russian must successfully complete 8 units (4 semesters) of SLL 500 Topics in Advanced Russian and pass a proficiency exam in the language.

Track III Field Examination (Slavic)

A written exam based on a reading list must be successfully passed by all students in the track. It is normally taken at the end of the semester in which M.A. course work is completed.

Doctor of Philosophy, Comparative Studies in Literature and Culture (Slavic Languages and Literatures)
Course Requirements

In addition to the M.A. course requirements listed above, at least eight courses (26–29 units) are required distributed as follows: COLT 602, CSLC 601, or CSLC 603; SLL 510 or SLL 512, SLL 545, SLL 546 and SLL 555; two courses selected from SLL 650, SLL 660 and SLL 665; one additional courses in SLL, CSLC or another relevant field. Students will also complete the professional development sequence, CSLC 600 and CSLC 700, which are 2-unit courses and offered only as credit/no credit. No more than two of the total required courses may be in directed research (590 or 790).

Qualifying Examination

To be admitted to candidacy for the Ph.D., students must pass this examination after all course work has been completed.

Dissertation Defense

An oral defense of the dissertation must be satisfactorily completed before the dissertation can be filed with the Graduate School.

Awarding of Degree

The degree of Ph.D. in Comparative Studies in Literature and Culture (Slavic Languages and Literatures) is conferred when all of the degree requirements have been completed satisfactorily.

Spanish and Latin American Studies

The Spanish and Latin American Studies track in comparative studies in literature and culture provides an optimal academic environment for students interested in advanced studies and research in Spanish and Latin American literature and culture studies. Students pursue a course of study designed to develop a broad knowledge of the subject matter within the framework of comparative studies as well as current developments in the field and are encouraged to devise individualized programs of specialization in keeping with the highest standards of scholarship.

Master of Arts, Comparative Studies in Literature and Culture (Spanish and Latin American Studies)
Course Requirements

Students are required to complete at least eight courses (32 units), distributed as follows: CSLC 501, CSLC 502 and CSLC 503; SPAN 501; four additional Spanish courses or, with permission, courses in a related field. Students specializing in the medieval and early modern periods are encouraged to take a course in the history of the Spanish language. No more than one of the eight courses may be in directed research (590).

First-year Review

The program conducts a thorough review of all first-year students at the end of the second semester. Students must receive a satisfactory evaluation to be permitted to continue to doctoral work.

Language Requirement

Reading knowledge of a language other than Spanish and English must be demonstrated either by successfully completing a course at the 400-level or above taught in that language or by passing a reading examination in the language. Students confer with the graduate adviser to decide which option is most appropriate.

Track III Field Examination (Spanish)

A written exam based on a reading list must be successfully passed by all students in the track. It is normally taken at the end of the semester in which M.A. course work is completed.

Doctor of Philosophy, Comparative Studies in Literature and Culture (Spanish and Latin American Studies)
Course Requirements

In addition to the M.A. course requirements listed above, six additional 4-unit courses are required distributed as follows: one of the following: COLT 602, CSLC 601 or CSLC 603; five additional courses in Spanish or, with permission, courses in a related field. Students will also complete the professional development sequence, CSLC 600 and CSLC 700, which are 2-unit courses and offered only as credit/no credit. No more than two of the total required courses may be in directed research (590 or 790).

Language Requirement

Reading knowledge of two languages in addition to Spanish and English must be demonstrated either by successfully completing a course at the 400-level or above taught in the languages or by passing a reading examination in the languages. Students confer with the

graduate adviser to decide which option is most appropriate. This requirement must be fulfilled at least 60 days before the qualifying examination.

Qualifying Examination

To be admitted to candidacy for the Ph.D., students must pass this examination after all course work has been completed.

Dissertation Defense

An oral defense of the dissertation must be satisfactorily completed before the dissertation can be filed with the Graduate School.

Awarding of Degree

The degree of Ph.D. in Comparative Studies in Literature and Culture (Spanish and Latin American Studies) is conferred when all of the degree requirements have been completed satisfactorily.

Certificate in Foreign Language Teaching

This credential provides certification in the theory and practice of second or foreign language teaching for student language teachers concurrently enrolled in graduate degree programs in foreign languages or related graduate programs at USC; for graduates of such programs who are teaching languages; for external candidates concurrently enrolled in similar programs at accredited colleges or universities; or for graduates of such programs who are teaching languages. The certificate is meant to supplement graduate study in the literature or linguistics of foreign languages. It is also meant to supplement classroom teaching. Refer to the Department of Spanish and Portuguese, page xx, for course work requirements.

Courses of Instruction

COMPARATIVE STUDIES IN LITERATURE AND CULTURE (CSLC)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

CSLC 501 Introduction to Comparative Media Studies (4) Ways of thinking about the differences and relations among different cultural media: literature, film, video, manga/comics, "new media," and so forth.

CSLC 502 Introduction to Literary Theory (4) Major developments in 20th century literary criticism, with special attention to theoretical work of the past three decades. (Duplicates credit in former COLT 502.)

CSLC 503 Introduction to Comparative Studies in Culture (4) Examines culture as an instrument of discursive practice that shapes social formations in Asia, Europe, North and Latin America.

CSLC 525 Studies in Literary and Cultural History (4, max 8) (Enroll in COLT 525)

CSLC 545 Studies in Literature and the Other Arts (4, max 8) (Enroll in COLT 545)

CSLC 555 Studies in Literatures of the Americas (4, max 8) (Enroll in COLT 555)

CSLC 565 Studies in Literatures of Asia (4, max 8) (Enroll in COLT 565)

CSLC 590 Directed Research (1-12) Research leading to the master's degree. Graded CR/NC. (Duplicates credit in former COLT 590.)

CSLC 600 Professional Development I: Publication (2, Sp) Preparation of book and article manuscripts for publication and placement in presses and journals; revising dissertations for publication; preparing papers for conferences. Students produce an article manuscript ready for submission to a journal. Graded CR/NC. Open only to doctoral students. (Duplicates credit in former COLT 603.)

CSLC 601 Seminar in Comparative Media Studies (4, max 12) Intensive comparative study of visual and literary media.

CSLC 602 Seminar in Literary Theory (4, max 12) (Enroll in COLT 602)

CSLC 603 Seminar in Comparative Studies in Culture (4, max 12) Intensive study of intellectual and cultural history, with a focus on key literary and theoretical texts.

CSLC 620 Seminar in Literature, Culture, and Thought (4, max 12) (Enroll in COLT 620)

CSLC 640 Seminar in Film and Visual Studies (4, max 12) Intensive study of various types of discourse (film, photography, literature) and their intersection with wider social, political, and theoretical issues.

CSLC 700 Professional Development II: Applying for Positions (2, Fa) Familiarizes students with the process of seeking an academic position, from assembling a dossier to interviews and on-campus visits. Graded CR/NC. (Duplicates credit in former COLT 601.)

CSLC 790 Research (1, max 12) Research leading to the doctorate. Maximum units that may be applied to the degree to be determined by the department. Graded CR/NC.

CSLC 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC.

Earth Sciences

Zumberge Hall of Science 117
(213) 740-6106
FAX: (213) 740-8801
Email: earthsci@dornsife.usc.edu
dornsife.usc.edu/earth
Chair: William M. Berelson, Ph.D.

Faculty

University Professor and W.M. Keck Foundation Chair in Geological Sciences: Thomas H. Jordan, Ph.D.

Wrigley Chair in Environmental Studies: Kenneth H. Nealson, Ph.D.

Wilford and Daris Zinsmeyer Early Career Chair in Marine Studies: A. Joshua West, Ph.D.

Professors: Jan Amend, Ph.D.; Thorsten Becker, Ph.D.; Yehuda Ben-Zion, Ph.D.; William M. Berelson, Ph.D.; David J. Bottjer, Ph.D.; Gregory A. Davis, Ph.D.*; James

F. Dolan, Ph.D.*; Katrina Edwards, Ph.D. (*Biological Sciences*); Douglas E. Hammond, Ph.D.*; Terence G. Langdon, Ph.D., D.Sc. (*Materials Science*); Steven P. Lund, Ph.D.*; James Moffett, Ph.D. (*Biological Sciences*); Scott R. Paterson, Ph.D.; John P. Platt, Ph.D.*; Charles G. Sammis, Ph.D.*; Sergio Sanudo-Wilhemly, Ph.D. (*Biological Sciences*); Lowell D. Stott, Ph.D.

Associate Professor: Frank A. Corsetti, Ph.D.

Assistant Professors: Julien Emile-Geay, Ph.D.; Sarah J. Feakins, Ph.D.; Naomi Levine, Ph.D. (*Biological Sciences*); Meghan Miller, Ph.D.

Professor (Research): Donald Paul, Ph.D. (*Engineering*)

Associate Professors (Research): Yong-Gang Li, Ph.D.; David A. Okaya, Ph.D.

Assistant Professor (Research): Jeremy Zechar, Ph.D.

Adjunct Professors: Luis Chiappe, Ph.D.; John Long, Ph.D.; Xiaoming Wang, Ph.D.

Adjunct Associate Professor (Research): Ellen Platzman, Ph.D.

Adjunct Assistant Professors (Research): Andrea Donnellan, Ph.D.; Boris Kaus, Ph.D.; Valbone Memeti, Ph.D.; Maria Prokopenko, Ph.D.

Emeritus Professors: Robert G. Douglas, Ph.D.; Alfred G. Fischer, Ph.D.; Donn S. Gorsline, Ph.D.; Thomas L. Henyey, Ph.D.; Teh-Lung Ku, Ph.D.; Bernard W. Pipkin, Ph.D.*; Ta-liang Teng, Ph.D.

*Recipient of university-wide or college teaching award.

The Department of Earth Sciences includes a spectrum of disciplines focused on understanding the processes that influence the tectonics and environment of the planet, on using this understanding to read the record of earth history written in rocks and sediments, and on developing models that can be used to predict future changes due to natural phenomena and recent perturbations caused by humans. Issues of societal concern related to seismic risk, climate change, environmental contamination and other geologic hazards play an important role. Subdisciplines housed in the department include geophysics, geochemistry, geobiology, structural geology, petrology, marine geology, sedimentology, physical and chemical oceanography, climate science, paleoceanography and paleontology.

The department is committed to emphasizing both educational and research programs and views these efforts as complementary. Instruction is offered on several levels. These include introductory classes for non-science majors, undergraduate courses that are appropriate for undergraduates majoring in earth sciences or other science and engineering disciplines, and graduate classes appropriate for advanced degrees. A close working relationship exists between students and faculty members. Classes beyond the introductory level are usually small, permitting personalized instruction. Field trips are an important part of the instructional program. Two research centers are affiliated with the department: the Southern California Earthquake Center and the Wrigley Institute of Environmental Studies. The graduate program is closely linked with these research efforts, and both graduate and undergraduate students participate in research projects. Collaboration in both research and teaching has led to ties with other programs, including the Department of Biological Sciences, the graduate program in Ocean Sciences and several departments in the USC Viterbi School of Engineering.

For students interested in pursuing careers in the earth and environmental sciences, the department offers B.A., B.S., M.S. and Ph.D. degrees. In addition, students may follow the concentration in climate, earth and environment offered by the Environmental Studies Program. Many graduates now hold positions in industry as environmental consultants or petroleum geologists, in government as managers or researchers, and in academia as faculty and researchers. The B.A. degree is recommended for students interested in the earth sciences but who intend to pursue careers in other fields, such as business, law or education.

Two minors are available. The geohazards minor is recommended for those who wish to broaden their background in natural hazards, global change or environmental problems. It is accessible to both non-science and science majors. The geobiology minor is recommended for those interested in interdisciplinary work in earth and biological sciences.

The Los Angeles and Southern California areas have a diverse geology, enabling students to gain broad, first-hand knowledge of geological processes. The department conducts field trips to study Southern California geology, and has access to oceanographic vessels for marine research. Many state-of-the-art laboratory instruments are available for use in research and instruction.

Proof of health insurance is mandatory when participation in field trips is required for credit in any earth sciences class.

Honor Society

The Department of Earth Sciences has one honor society: the Omega Chapter of Sigma Gamma Epsilon, the national honorary earth sciences fraternity. "Sig Gam" is an undergraduate organization which sponsors undergraduate activities within the department.

Undergraduate Degrees

Department Major Requirements for the Bachelor of Science in Geological Sciences

REQUIRED COURSES		UNITS
Introduction: Any one of (4 units):		
GEOL 105L	Planet Earth	4
GEOL 107L	Oceanography	4
GEOL 108L	Crises of a Planet	4
GEOL 125L	Earth History: A Planet and its Evolution	4
GEOL 130L	The Nature of Scientific Inquiry	4
GEOL 150L	Climate Change	4
GEOL 240L	Earthquakes	4

Required (12 units):

GEOL 315L	Minerals and Earth Systems	4
GEOL 387A	Undergraduate Team Research	2
GEOL 494X	Senior Thesis	2
GEOL 465	Field Geology, or	
GEOL 490X	Directed Research	4

Electives: choose at least seven of the following (28 units)*:

BISC 427	The Global Environment	4
BISC 474	Ecosystem Function and Earth Systems	4
BISC 483	Geobiology and Astrobiology	4
GEOL 316L	Petrologic Systems	4
GEOL 320L	Surficial Processes and Stratigraphic Systems	4
GEOL 321L	Structural Geology and Tectonics	4
GEOL 387bc	Undergraduate Team Research	2-2
GEOL 412	Oceans, Climate, and the Environment	4
GEOL 425L	Data Analysis in the Earth and Environmental Sciences	4
GEOL 433L	Paleontology and Evolution in Deep Time	4
GEOL 440L	Geophysics and Geoengineering	4
GEOL 450L	Geosystems	4
GEOL 460L	Geochemistry	4
GEOL 470	Environmental Hydrogeology	4
MATH 225	Linear Algebra and Linear Differential Equations	4
MATH 226	Calculus III	4

*Up to two upper-division courses from other science departments may be substituted for any two in this group, on approval of the departmental undergraduate adviser.

Required courses from other departments (24 units):

CHEM 105aLbL	General Chemistry, or	
CHEM 115aLbL	Advanced General Chemistry	4-4
MATH 125	Calculus I	4
MATH 126	Calculus II	4
PHYS 135aBL	Physics for the Life Sciences, or	
PHYS 151L	Fundamentals of Physics I: Mechanics and Thermodynamics, and	4-4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism, or	
BISC 120Lx	General Biology: Organismal Biology and Evolution, and	4-4
BISC 220L	General Biology: Cell Biology and Physiology, or	
BISC 121L	Advanced General Biology: Organismal Biology and Evolution, and	4-4
BISC 221L	Advanced General Biology: Cell Biology and Physiology	4-4
Total units		68

Department Major Requirements for the Bachelor of Arts in Earth Sciences

REQUIRED COURSES		UNITS
Introduction: any one of (4 units):		
GEOL 105L	Planet Earth	4
GEOL 107L	Oceanography	4
GEOL 108L	Crises of a Planet	4
GEOL 125L	Earth History: A Planet and its Evolution	4
GEOL 130L	The Nature of Scientific Inquiry	4
GEOL 150L	Climate Change	4
GEOL 240L	Earthquakes	4

Required:		
GEOL 315L	Minerals and Earth Systems	4
Electives: choose at least seven of the following (28 units):		
BISC 427	The Global Environment	4
BISC 474	Ecosystem Function and Earth Systems	4
BISC 483	Geobiology and Astrobiology	4
GEOL 316L	Petrologic Systems	4
GEOL 320L	Surficial Processes and Stratigraphic Systems	4
GEOL 321L	Structural Geology and Tectonics	4
GEOL 387abc	Undergraduate Team Research	2-2-2
GEOL 412	Oceans, Climate, and the Environment	4
GEOL 425L	Data Analysis in the Earth and Environmental Sciences	4
GEOL 433L	Paleontology and Evolution in Deep Time	4
GEOL 440L	Geophysics and Geoengineering	4
GEOL 450L	Geosystems	4
GEOL 460L	Geochemistry	4
GEOL 465	Field Geology	4

GEOL 470	Environmental Hydrogeology	4
GEOL 490x	Directed Research	1-8
GEOL 494x	Senior Thesis	2

Required courses in other departments (8 units):

CHEM 105aL	General Chemistry	4
MATH 118x	Fundamental Principles of the Calculus, or	
MATH 125	Calculus I	4

Choose any one of the following (4 units):

BISC 120L	General Biology: Organismal Biology and Evolution	4
CHEM 105bL	General Chemistry	4
PHYS 135aL	Physics for the Life Sciences	4
Total units		48

Undergraduate Honors Program

The department offers an honors program for students pursuing either a B.S. or a B.A. in Earth Sciences. Students wishing to participate in this program must complete GEOL 494x Senior Thesis. Honors will be awarded upon successful completion of the thesis and attainment of an overall GPA of 3.0 and a GPA of 3.5 in courses in the major.

Grade Point Average in Major Subject

A grade of C or higher is required in each course in the earth sciences courses used to complete the department or physical sciences major.

Requirements for the Bachelor of Science in Physical Sciences

REQUIRED COURSES	UNITS
Lower division:	
CHEM 105aLbL General Chemistry, or	
CHEM 115aLbL Advanced General Chemistry	4-4
GEOL 105L Planet Earth	4
PHYS 151L Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L Fundamentals of Physics II: Electricity and Magnetism	4
PHYS 153L Fundamentals of Physics III: Optics and Modern Physics	4
Upper division:	
Astronomy elective*	4
Chemistry elective*	4
Earth Sciences elective*	4
Physics elective*	4
Three additional electives from these fields*	12
Other courses:	
MATH 125 Calculus I	4
MATH 126 Calculus II	4
MATH 226 Calculus III	4
Total units:	64

*Upper-division courses must be applicable to majors in their respective departments.

Minor in Geobiology

The minor in geobiology is designed to allow students majoring in biology to incorporate interdisciplinary courses in earth sciences into their program or to allow students majoring in geology to incorporate interdisciplinary courses in biology into their program. This field represents the intersection of what have been traditional disciplines and is valuable for understanding evolution, environmental contaminant behavior and ocean sciences. Students with majors offered by biological or earth or geological sciences will be able to complete this minor with 16 to 24 units of course work beyond their major requirements. Other students may need to complete up to 48 units of course work beyond their major requirements. For example, students majoring in biological sciences might take an introductory GEOL course; GEOL 315L; GEOL 433L or BISC 483; and two additional upper-division elective courses from the list below. Students majoring in earth or geological sciences must take BISC 120L and BISC 220L; GEOL 433L or BISC 483; and three additional elective courses. Courses selected must include at least 16 units unique to the minor and at least 16 units in a department outside the major.

REQUIRED COURSES	UNITS
BISC 120Lx General Biology: Organismal Biology and Evolution	4
BISC 220L General Biology: Cell Biology and Physiology	4
CHEM 105aLbL General Chemistry	4-4
GEOL 315L Minerals and Earth Systems	4

ELECTIVE COURSES	UNITS
One introductory GEOL course:	
GEOL 105L, GEOL 107L, GEOL 108L, GEOL 125L, GEOL 130L, GEOL 150L or GEOL 240L	4
BISC 483* Geobiology and Astrobiology, or	
GEOL 433L Paleontology and Evolution in Deep Time	4
Three upper-division BISC courses**	12
Two courses from the following (8 units):	
BISC 474L* Ecosystem Function and Earth Systems	4
BISC 483* Geobiology and Astrobiology	4
GEOL 320L Surficial Processes and Stratigraphic Systems	4
GEOL 412 Oceans, Climate and the Environment	4
GEOL 433L Paleontology and Evolution in Deep Time	4
GEOL 450L Geosystems	4
GEOL 460L Geochemistry	4
GEOL 470 Environmental Hydrogeology	4

*Indicates BISC course that is also cross-listed under GEOL

**Must carry credit for a biology major

Minor in Geohazards

The geohazards minor allows students who are not geology majors to pursue a course of study that will lead to greater understanding of geohazards such as climate change, earthquakes, volcanic eruptions, floods, environmental contamination and availability of natural

resources. These issues are examined in a number of upper-division geology courses, and each student can select from the list below depending on the particular area of interest and whether previous coursework has been completed to meet prerequisites for some of the choices. The minor requires an introductory class, an upper-division course in either formation of minerals or geosystem behavior and three elective courses from the list below. The minimum number of units to complete the minor is 24, including the introductory course CHEM 105aL (a corequisite for GEOL 315L) or MATH 125 (prerequisite for GEOL 450L) and three of the group: BISC 427, GEOL 305L, GEOL 315L, GEOL 316L, GEOL 320L, GEOL 321L, GEOL 433L and GEOL 450L. The remaining courses listed have additional prerequisites.

REQUIRED COURSES (8 UNITS)	UNITS
CHEM 105aL General Chemistry, and	4
GEOL 315L Minerals and Earth Systems, or	4
MATH 125 Calculus I, and	4
GEOL 450L Geosystems	4

ELECTIVE COURSES	UNITS
One introductory GEOL course:	
GEOL 105L, GEOL 107L, GEOL 108L, GEOL 125L, GEOL 130L, GEOL 150L or GEOL 240L	4

Three of the following (12 units):	
BISC 427 The Global Environment	4
GEOL 305L Introduction to Engineering Geology	4
GEOL 315L Minerals and Earth Systems	4
GEOL 316L Petrologic Systems	4
GEOL 320L Surficial Processes and Stratigraphic Systems	4
GEOL 321L Structural Geology and Tectonics	4
GEOL 412 Oceans, Climate, and the Environment	4
GEOL 433L Paleontology and Evolution in Deep Time	4
GEOL 440L Geophysics and Geoengineering	4
GEOL 450L Geosystems	4
GEOL 460L Geochemistry	4
GEOL 470 Environmental Hydrogeology	4

Progressive Degree Program in Geological Sciences

This program permits exceptional students to receive both a B.S. and M.S. in geological sciences in not more than 10 semesters. It is intended for students with extraordinary geological sciences preparation and performance who demonstrate a superior level of overall scholarship, including a GPA of 3.5 or better. Students may apply on completion of 64 units of course work but not later than the end of the junior year (or the completion of 96 units). The application for admission to a progressive degree program must be accompanied by an approved course plan proposal and letters of recommendation from two USC faculty members in the Department of Earth Sciences. The requirements for both the B.S. and M.S. degrees must be satisfied. Further details about progressive degree programs can be found on page 87xx.

Graduate Degrees

The department prepares professional earth scientists for careers in academia, government and industry. A wide range of specializations is offered in the department including sedimentary geology, paleobiology, paleoclimatology, paleoecology, micropaleontology, paleoceanography, geochemistry, geobiology, geophysics, geodesy, seismology, engineering geology and properties of earth materials, igneous and metamorphic petrology, structural geology and tectonics, and interdisciplinary options. Degrees in ocean sciences (through the Graduate Program in Ocean Sciences) are available; see page 419xx.

Admission Requirements

Prerequisites

An applicant for admission should have the equivalent of the courses in earth sciences, chemistry, mathematics, and physics required for the B.S. degree in geological sciences. Applicants with an undergraduate degree in science or engineering who lack required earth sciences courses will also be given consideration.

Criteria

The Department of Earth Sciences requires the following evidence for admission to its doctoral program: strong undergraduate background and a superior academic record as documented by GPAs in undergraduate and any completed graduate work, Graduate Record Examinations scores no more than five years old in the verbal and quantitative General Test, and at least three letters of recommendation from undergraduate and, if applicable, graduate advisers and professors. The number of students accepted in any one year depends on available space in the department and acceptance for advisement by one or more professors.

Funding is offered for M.S. degrees only when completed en route to the pursuit of a Ph.D. degree.

Procedure

The online USC graduate admissions application will refer applicants to a required supplemental departmental application. The department admits students for both the fall and spring semesters; however, applicants for assistantships and fellowships are encouraged to apply for the fall semester.

Degree Requirements

These degrees are under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue (page 97xx) for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School.

Master of Science in Geological Sciences

Foreign Language/Research Tool Requirements

There is no language or research tool requirement for the master's degree.

Course Requirements

The M.S. degree in geological sciences requires 24 units of course work plus at least four thesis units. These restrictions apply: at least 16 units must be 500 level or higher; no more than eight units can be 590 Directed

Research; and a maximum of four units, with superior grades, can be transferred from an accredited graduate school. Students are required to have an overall GPA of at least 3.0 (A = 4.0) in all graduate work. Students are also required to attend a series of departmental seminars.

Thesis

Students should arrange for the appointment of a thesis adviser and committee after the first semester, or, at the latest, after the first year of graduate work. The thesis committee should consist of the adviser plus two other faculty members, all of whom are generally selected from the department faculty. Once the committee is arranged, the student may make formal application to the Graduate School for the M.S. degree.

Doctor of Philosophy in Geological Sciences

Application deadline: January 1

Course Requirements

For students who have earned a master's degree, the minimum number of course credits required for the Ph.D. is 40 units. No more than four of these units may be earned in 794 Doctoral Dissertation. For students who have not earned a master's degree, the minimum number of course credits required is 60 units, including a maximum of eight units of 794 Doctoral Dissertation. The qualifying exam committee may require additional course work to insure a sufficient background in the student's area of specialization. At least two-thirds of the number of units presented for the degree must be 500 level or higher. Although the official minimum GPA for all graduate work attempted at USC is 3.0, the department does not consider a doctoral candidate in good standing unless the graduate GPA is considerably higher than the minimum (approximately 3.25 or above in graduate courses taken within the department).

Screening Procedure

Students in the Ph.D. program must pass the screening procedure before their 25th unit of graduate credit. Screening consists of a review of the student's progress and is usually done by the chair following a written recommendation by the student's adviser(s).

Qualifying Exam Committee

The doctoral qualifying exam committee is formed after the student has passed the screening procedure. The committee is appointed by the department with the advice of the student's research adviser. The five-member committee consists of the adviser, a minimum of three other members from the Department of Earth Sciences, and one from outside the department. The committee consults with the student, recommends an appropriate program of study and administers the written and oral qualifying examinations.

Qualifying Examination

This examination consists of two parts, one written and the other oral. The written exam, which precedes the oral, includes questions submitted by committee members on current geological problems and theory. The oral portion of the exam consists of the defense of two propositions written by the candidate prior to the oral exam. In addition, general questions are posed to

test the student's breadth of scientific and earth science background. The student's performance is evaluated by the qualifying exam committee, with a pass based on not more than one negative vote or abstention. Those who intend to take the exam must meet all the conditions specified in the section on general requirements for the Ph.D.

Defense of the Dissertation

When the candidate has passed the qualifying examination, a dissertation committee replaces the qualifying exam committee. The latter is appointed by the adviser and qualifying exam committee in conjunction with the student. The dissertation committee administers the final defense of the dissertation.

The defense takes place after the dissertation is substantially complete, and upon unanimous approval by the dissertation committee. It is conducted in the form of an open departmental seminar, but is evaluated by the dissertation committee alone.

Interdisciplinary Programs

Interdisciplinary programs can be arranged for students also interested in astronomy, bioscience, chemistry, engineering, oceanography and physics. The Department of Earth Sciences maintains laboratories for micropaleontologic, paleobiologic, mineralogic, petrologic, geophysical, geochemical and oceanographic research, and collections are available for comparative work in invertebrate paleontology. Students interested in systematic studies will find a wealth of material, available for comparative purposes, in the adjacent Los Angeles County Museum. Facilities for research in sedimentation, oceanography, and marine geology are provided in the department and by the university's research fleet.

Courses of Instruction

EARTH SCIENCES (GEOL)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

GEOL 105Lg Planet Earth (4, FaSpSm) Geologic structure and evolution of planet earth. Principles of plate tectonics, rocks and minerals, processes of mountain building, continent and ocean formation, earthquakes, volcanism, development of landforms by running water and glaciers. Lecture, 3 hours; laboratory, 2 hours. One all-day or two-day field trip required.

GEOL 107Lg Oceanography (4, FaSp) Physical, chemical, and geological character of the oceans and ocean basins. Origin of the oceans. Ocean processes and agents. Economic value of the oceans. Lecture, 3 hours; laboratory, 2 hours. One all-day field trip required.

GEOL 108Lg Crises of a Planet (4, FaSpSm) Impact of civilization on planet earth, and impact of earth's natural evolution on society: earthquakes, volcanism, landslides, floods, global warming, acid rain, groundwater depletion and pollution; mineral and fossil fuel depletion, formation of the ozone hole. Lecture, 3 hours; laboratory, 2 hours. One all-day or overnight field trip.

GEOL 125Lg Earth History: A Planet and Its Evolution (4, FaSpSm) Basic principles of physics, chemistry, biology, and mathematics used in evaluating clues written in the rock record, and the processes that have shaped our planet. Lecture, 3 hours; laboratory, 2 hours. At least one field trip required.

GEOL 130Lg The Nature of Scientific Inquiry (4, FaSp) Examination of the scientific process: what constitutes science; evolution of ideas about the nature of space, time, matter, and complexity; paradigm shifts in the biological and earth sciences. Lecture, 3 hours; laboratory, 2 hours.

GEOL 150Lg Climate Change (4, FaSp) Climate systems from the beginning of earth history to the present; tools and techniques used to reconstruct prehistoric climate records; effects of climate variations on development of life forms on earth.

GEOL 160L Introduction to Geosystems (4, FaSpSm) Survey of natural geological/environmental processes (systems) and variability active near the earth's surface in the region that houses most life (the biosphere). Open only to environmental studies majors and minors. *Corequisite:* ENST 100.

GEOL 240Lg Earthquakes (4, FaSpSm) Causes of earthquakes and nature of large faults; earthquake hazard and risk; world's great earthquakes; understanding the Richter scale. Lecture, 3 hours; laboratory, 2 hours; one field trip required. *Concurrent enrollment:* MDA 140.

GEOL 241Lg Energy Systems (4, FaSpSm) Energy resources from a global perspective, including fossil fuels, nuclear, and renewable energy.

GEOL 290L Special Laboratory (1, FaSp) Laboratory component for GEOL 105L, GEOL 107L, GEOL 108L, GEOL 125L, GEOL 130L, GEOL 150L, or GEOL 240L for students with equivalent lecture credit from another institution.

GEOL 305L Introduction to Engineering Geology (4, Sp) Principles of geology with emphasis on structural geology, hydrogeology and geological hazards; basic geologic considerations in civil engineering practice; introduction to mineralogy and petrology. Field trip required. Lecture, 3 hours; laboratory, 2 hours. (Duplicates credit in GEOL 105L and GEOL 108L.)

GEOL 315L Minerals and Earth Systems (4, Fa) Minerals and their formation in Earth geosystems; includes discussions of mineral properties, crystal structures, uses and biogeochemical importance. Lecture, 3 hours; laboratory, 6 hours; required field trips. *Corequisite:* CHEM 105aL or CHEM 115aL; *recommended preparation:* any introductory GEOL course.

GEOL 316L Petrologic Systems (4, Sp) Formation and identification of igneous, metamorphic and sedimentary rocks; interpretation of tectonic and environmental settings based on rock type and chemistry. Lecture, 3 hours; laboratory, 6 hours; required field trips. *Prerequisite:* GEOL 315L.

GEOL 320L Surficial Processes and Stratigraphic Systems (4, Fa) Processes of erosion, sediment transport, and deposition that shape the land surface; landscape response to tectonism; recognition and interpretation of depositional environments in the stratigraphic record. (Duplicates credit in former GEOL 334L, GEOL 451L.) *Corequisite:* GEOL 315L.

GEOL 321L Structural Geology and Tectonics (4, Sp) Field and theoretical aspects of rock deformation, analysis of structural systems, and stress and strain; orogenic belts and plate tectonics; introduction to field techniques and construction of geologic maps. *Recommended preparation:* GEOL 320L.

GEOL 387abcg Undergraduate Team Research (a: 2, Sp; b: 2, max. 4, Sm; c: 2, max 4, Fa) a. Introduction to scientific inquiry, field research opportunities, and history of physical sciences; strategies, research methodologies, and writing skills for proposals, abstracts, papers, and professional development. Duplicates credit in the former GEOL 385. *Recommended preparation:* A GE course in Earth Science. b. Multidisciplinary, learner-centered, individual and team-based student research, abroad and in the U.S.; field data collection and interpretation, mentored by domestic and international scientists.

GEOL 390 Special Problems (1–4) Supervised individual studies. No more than one registration permitted. Enrollment by petition only.

GEOL 412 Oceans, Climate, and the Environment (4, Sp) Survey of physical, chemical, and geological oceanography emphasizing the role of the oceans in modulation of climate, atmospheric composition and biogeochemical cycles; paleoceanography and paleoclimate. *Corequisite:* CHEM 105bL, MATH 126; *recommended preparation:* PHYS 151L or PHYS 135abL.

GEOL 425L Data Analysis in the Earth and Environmental Sciences (4, Fa) Introduction to mathematical methods giving insight into earth and environmental data. Topics include probability and statistics, time-series analysis, spectral analysis, inverse theory, interpolation. *Recommended preparation:* MATH 126, familiarity with matrix algebra.

GEOL 427 The Global Environment (4, Sp) (Enroll in BISC 427)

GEOL 433L Paleontology and Evolution in Deep Time (4, Fa) Origin and evolution of life; Precambrian life; evolutionary history of major groups during the Phanerozoic; mass extinctions; deep time and evolutionary processes. Lecture, 3 hours; laboratory, 3 hours; required field trips. *Recommended preparation:* any introductory GEOL course.

GEOL 440L Geophysics and Geoengineering (4, Sp) Plate tectonics, magnetic and gravity fields, earthquakes, seismic waves, reflection and refraction seismics, heat transport, mantle convection, deep Earth structure, data analysis. Includes field trip. *Prerequisite:* MATH 126; *corequisite:* PHYS 135bL or PHYS 152L.

GEOL 441 Seismic Exploration Geophysics (4, FaSp) Seismic wave theory, ray theory, reflection, refraction, data processing, signal enhancement, field instrumentation and techniques on land and at sea; geological interpretation of seismic data. One field trip.

GEOL 445 Earth Climate: Past, Present, and Future (4) (Enroll in ENST 445)

GEOL 450L Geosystems (4, Fa) Geosystems, such as mantle convection, active faults, climate, and the carbon cycle, will be studied using numerical models and concepts such as chaos, universality, emergence, and intermittency. Lecture, 3 hours; laboratory, 2 hours. *Prerequisite:* MATH 125; *recommended preparation:* MATH 126.

GEOL 460L Geochemistry (4, Fa) Composition, origin, and evolution of the earth; principles of physical chemistry applied to aqueous systems; reaction-diffusion modeling and problems in sedimentary geochemistry; global (bio)geochemical cycles and environmental problems. Lecture, 3 hours; laboratory/discussion, 2 hours. *Prerequisite:* CHEM 105bL or CHEM 115bL and MATH 126.

GEOL 465L Field Geology (4, max 8, SpSm) Ten days to four weeks of field study in an area of geological complexity, with preparatory instruction. *Recommended preparation:* introductory earth science course, e.g., GEOL 105L, GEOL 315L. One or more of GEOL 316L, GEOL 320L.

GEOL 470L Environmental Hydrogeology (4, FaSpSm) Concepts in hydrogeology and application to environmental problems. Topics include groundwater and surface water hydrology, chemistry, and contamination. Includes labs, guest lectures, and field trips. *Recommended preparation:* GEOL 105L, GEOL 160L.

GEOL 474 Ecosystem Function and Earth Systems (4) (Enroll in BISC 474L)

GEOL 483 Geobiology and Astrobiology (4) (Enroll in BISC 483)

GEOL 490x Directed Research (1–8, max 12) Individual research and readings. Not available for graduate credit.

GEOL 494x Senior Thesis (2, FaSp) Writing of a thesis under individual faculty supervision. Not available for graduate credit.

GEOL 499 Special Topics (2–4, max 8) Special topics in the earth sciences. Field trip required when appropriate to the topic.

GEOL 500 Marine Paleoecology (3, 2 years, Sp) Principles of marine paleoecology; interrelationships between marine organisms and their environment in geologic time. *Recommended preparation:* GEOL 577L.

GEOL 501 Paleobiology (3, Fa) Concepts and methods for functional morphologic analysis of fossil marine invertebrates. Systematics theory and methodology, macroevolution, and broad biotic trends in the Phanerozoic. *Recommended preparation:* GEOL 433L.

GEOL 505 Introductory Graduate Seminar in Earth Sciences (2, Fa) Lectures by Earth Sciences faculty about current research; introduction of new graduate students to the breadth of current research; applying for research funding; practicing effective research presentations. Graded CR/NC. Open only to geological sciences and ocean sciences master's and doctoral students.

GEOL 510L Advanced Stratigraphic Field Methods (3) Stratigraphic field methods and computer-assisted data analysis. Field trips incorporating vertical and lateral facies analysis; collection of paleocurrent, fabric, paleomagnetic, photogeologic and compaction data. Lecture, 2 hours; laboratory, 2 hours; field trips. *Prerequisite:* GEOL 320L.

GEOL 511L Depositional Systems (3) Analysis of depositional systems, including conceptual methods of lithostratigraphy, biostratigraphy, chronostratigraphy, and paleoecology; description of major depositional environments. Lecture, 2 hours; laboratory, 2 hours.

GEOL 512 Introduction to Chemical and Physical Oceanography (3, Fa) (Enroll in OS 512)

GEOL 514 Marine Geology (3, Fa) Origin and characteristics of ocean basins; marine sedimentary environments; shoreline classification and character; evolution of oceanic features. Lecture, 3 hours; research conference, 1 hour.

GEOL 515 Introduction to Atmospheric Science (3, Fa) Elementary physical principles underlying the behavior of Earth's atmosphere. Dry and moist thermodynamics, radiative transfer, conservation laws, fundamental dynamical balances, instability theory, cloud physics. *Recommended preparation:* PHYS 161L, PHYS 304.

GEOL 520 Ichnology (3, 2 years, Fa) Ancient and recent borings and bioturbation structures and their utilization in stratigraphic, paleoenvironmental, paleoecological, sedimentological, and geochemical studies. *Recommended preparation:* GEOL 320L and GEOL 433L.

GEOL 521L Advanced Structural Geology (3, FaSp) Advanced field and theoretical aspects of rock deformation, strain and stress analyses, and evolution of structural systems. Includes lab, field trip(s), and class project.

GEOL 525 The Science of Climate Change (4, Sp) Introduction to the fundamental aspects and the factors that influence ocean and atmospheric behavior, and how the earth's climate has varied in the past.

GEOL 530 Modern Perspectives on Crustal Dynamics (3, 2 years, Sp) Deformation mechanisms, strength and structure of the crust. Fractal scaling in structures and dynamic processes. Geodetic measurement of crustal deformation and spatio-temporal patterns of seismicity.

GEOL 531 Plate Interactions: Geological Aspects (3, 2 years, Sp) Principles and geometrics of plate tectonics; geologic characteristics of modern plate boundaries of divergent, convergent, transform type; ocean basin and orogen development from worldwide examples. Field trip.

GEOL 532 Advanced Geologic Mapping (3, Fa) Principles of mapping geologically complex terranes of different structural style. Fieldwork will be coordinated with seminar review of diverse structural phenomena. Field trips. *Recommended preparation:* GEOL 321L, GEOL 465L.

GEOL 533L Continental Margin Arcs (3) Evolution of continental margin arcs, magmatic systems within arcs. Arcs as tectonic elements and "differentiation factories" leading to formation and removal of continental material. *Recommended preparation:* GEOL 316L, GEOL 321L.

GEOL 534L Mechanics of Lithospheric Deformation (3, Fa) The mechanical description of deformational processes at both crustal and lithospheric scales, and the interpretation of geological and geophysical data in terms of these processes.

GEOL 535L Microstructures and Deformation Mechanisms (3, 3 years, Fa) Examination of deformation mechanisms and resulting microstructures in rocks; chemical and textural equilibrium; physical and chemical processes during fluid flow; prophyroblast-matrix relationships; interpretation of kinematic indicators. Laboratory. *Prerequisite:* GEOL 321L.

GEOL 536 Principles of Geomagnetism and Paleomagnetism (3, 2 years, Sp) Historic geomagnetic field behavior, secular variation, rock magnetism, paleomagnetic techniques, magnetic polarity time scale, apparent-polar-wander paths, and applications to stratigraphic and geotectonic studies. *Recommended preparation:* GEOL 440.

GEOL 537 Rock Mechanics (3, 2 years, Sp) Elasticity, fracture, and flow properties of rocks and minerals; effects of temperature, pressure, petrology, fractures, and interstitial fluids. Experimental techniques and geological applications.

GEOL 538 Tectonic Evolution of Western North America (3, 2 years, Sp) Geosynclinal and orogenic development of western North America from the Precambrian to present, in the light of plate tectonics concepts. Field trips. *Recommended preparation:* GEOL 321L.

GEOL 540 The Mantle System (3, Sp) Dynamics and structure of the deep earth and its relationship to earth evolution. *Recommended preparation:* GEOL 440L and GEOL 534L.

GEOL 550 Chemical Equilibrium and Disequilibrium in Geology (3, 2 years, Sp) Phase equilibria; phase diagrams; thermodynamics of aqueous and solid solutions; irreversible thermodynamics; kinetics, diffusion, and metasomatism, with applications to problems in petrology and geochemistry. *Prerequisite:* GEOL 460L.

GEOL 551 Introduction to Seismology (3, 2 years, Fa) Basic elements of seismology for the study of the earth's interior and the tectonic process, utilizing observations of seismic waves.

GEOL 552 Advanced Seismology (3) Advanced methods of theoretical seismology for studying the generation of seismic waves from natural and artificial sources and the propagation through realistic earth models.

GEOL 553 Physics of Earthquakes (3, 2 years, Fa) Basic physics of earthquakes and seismicity. Continuum elasticity; fracture mechanics; laboratory friction; damage rheology; physics of critical phenomena; spatio-temporal seismicity patterns; analysis of complex data sets. *Recommended preparation:* GEOL 537 and/or GEOL 551.

GEOL 555 Paleooceanography (3) Mesozoic and Cenozoic paleooceanography; analytical approaches applied to water mass history, paleocirculation, paleoproductivity, nutrient cycling, and paleotemperature reconstruction. Lecture, readings, and research project. *Recommended preparation:* GEOL 412 or GEOL 512 and GEOL 460L.

GEOL 556 Active Tectonics (3, Sp) Aspects of deformation and associated seismicity at active plate margins around the world. Includes review of plate tectonics, seismology, geodesy, paleomagnetism, geodynamics, Quaternary dating techniques, tectonic geomorphology, paleoseismology, and seismic hazard assessment. Two weekend field trips required. *Recommended preparation:* GEOL 530, GEOL 531; *prerequisite:* GEOL 321L.

GEOL 557 Numerical Modeling of Earth Systems (3, Fa) The quantitative modeling of ordinary and partial differential equations as they arise in geology, geophysics, climate modeling and related fields with practical, numerical focus. *Recommended preparation:* GEOL 425, GEOL 534, and GEOL 540.

GEOL 558 Inverse Theory in the Earth Sciences (3, FaSp) Short review of probability theory, and extensive coverage of linear inverse theory, including seismic imaging. Non-linear inverse problems and factor analysis. *Recommended preparation:* GEOL 425L.

GEOL 560 Marine Geochemistry (3, 2 years, Sp) Principles of chemical sedimentology and aquatic chemistry; diagenesis, authigenesis, and the geochemical cycle. *Prerequisite:* GEOL 460L.

GEOL 564 Isotope Geochemistry (3, 2 years, Sp) Variations in the isotopic composition of elements in the earth's crust with applications to geological problems, including geochronology, geothermometry, ore genesis, and crustal evolution.

GEOL 566 Geochemistry Seminar (1-4) Current topics in geochemistry.

GEOL 567 Stable Isotope Geochemistry (3) Theoretical basis; nuclide nomenclature, partition function ratios, mechanisms and rates of isotope exchange; mass spectrometry and extraction techniques; application of stable isotopes to geologic problems.

GEOL 568L Metamorphic Petrology (3, 2 years, Fa) An introduction to advanced study of metamorphic mineral assemblages with use of experimental and field data. Lecture, 2-4 hours; laboratory to be arranged.

GEOL 569L Igneous Petrology (3, 2 years, Fa) Study of igneous and meta-igneous rocks from the basis of experimental and field data and theoretical considerations. Lecture, 2-4 hours, laboratory to be arranged.

GEOL 575 Organic Geochemistry (3, Sp) Advanced course on the fundamentals and frontiers of organic geochemistry. Topics include biomarker and isotope geochemical approaches to reconstructing past marine, terrestrial environmental change. *Recommended preparation:* CHEM 105abL, CHEM 322abL, GEOL 150L, GEOL 412, or equivalent background.

GEOL 577L Micropaleontology (3, 2 years, Fa) Microscopic fossils, especially foraminifera, their classification, the common genera, morphology, evolutionary trends; laboratory and field techniques. Lecture, 2 hours; laboratory and fieldwork, 6 hours. *Recommended preparation:* GEOL 433L.

GEOL 588L Quantitative Analysis for Biological and Earth Sciences (4, Sp) (Enroll in BISC 588L.)

GEOL 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

GEOL 593 Practicum in Teaching the Liberal Arts (2) Practical principles for the long-term development of effective teaching within college disciplines. Intended for teaching assistants in Dornsife College.

GEOL 594abz Master's Thesis (2-2-0) Credit on acceptance of thesis. Graded IP/CR/NC.

GEOL 599 Special Topics (2-4, max 9, Irregular) Special topics in the earth sciences. Field trip required when appropriate to the topic. *Prerequisite:* second-year graduate standing normally required.

GEOL 601 Seminar in Sedimentary Geology (1-3, max 6, Sp) Analysis and discussion of current topics in sedimentary geology; topics will be chosen by students and faculty to focus on areas of recent advances.

GEOL 609 Seminar in Earthquake Physics (2, max 6, FaSp) Current research on the physics governing earthquakes and faults, including results from continuum and fracture mechanics, statistical physics, lab experiments, and seismological observations.

GEOL 650 Recent Advances in Paleontology (3) Selected review of recent ideas in paleobiology, evolution, and paleoecology related to examining the current frontiers in paleontology.

GEOL 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

GEOL 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation.

East Asian Area Studies

College House 101
(213) 740-2991
FAX: (213) 740-8409
Email: easc@dornsife.usc.edu
dornsife.usc.edu/easc
Director: David Kang, Ph.D.

Associated Faculty

Professors: Jonathan Aronson (*Communication and International Relations*); Philip Birnbaum-More (*Management and Organization*); Baizhu Chen (*Finance and Business Economics*); Dominic Cheung (*East Asian Languages and Cultures, Comparative Literature*); Iris Chi (*Social Work, Gerontology*); Eugene Cooper (*Anthropology*); Robert Dekle (*Economics*); JoAnn Marie Farver (*Psychology*); Eric Heikkila (*Public Policy*); Velina Hasu Houston (*Dramatic Arts*); David James (*Cinematic Arts*); Douglas Joines (*Finance and Business Economics*); David Kang (*International Relations, Business*); Namkil Kim (*East Asian Languages and Cultures*); Dorinne Kondo (*Anthropology, American Studies and Ethnicity*); Audrey Li (*East Asian Languages and Cultures, Linguistics*); Thomas W. Lin (*Accounting*); Akira Mizuta Lippit (*Cinematic Arts, East Asian Languages and Cultures, Comparative Literature*); Roger Moon (*Economics*); Jeffrey B. Nugent (*Economics, Business*); C.W. Park (*Business*); Joan Piggott (*History*); Nandini Rajagopalan (*Management and Organization*); Harry Richardson (*Public Policy*); Stanley Rosen (*Political Science*); Ellen Seiter (*Cinematic Arts*); Jean Shih (*Pharmacology and Pharmaceutical Sciences*); Andrew Simpson (*Linguistics, East Asian Languages and Cultures*); James Steele (*Architecture*); John

Strauss (*Economics*); Guofu Tan (*Economics*); Shui Yan Tang (*Public Policy*); Yan Xiao (*Engineering*)

Associate Professors: David Bialock (*East Asian Languages and Cultures*); Bettine Birge (*East Asian Languages and Cultures, History*); Harrison Cheng (*Economics*); Meiling Cheng (*Dramatic Arts, Critical Studies, English*); Ruth Gim Chung (*Education*); Joshua Goldstein (*History*); Yasushi Hamao (*Finance and Business Economics*); George A. Hayden (*East Asian Languages and Cultures*); Hajime Hoji (*Linguistics, East Asian Languages and Cultures*); Mingyi Hung (*Accounting*); Kyung Moon Hwang (*History*); Jacques Hymans (*International Relations*); Saori Katada (*International Relations*); Lon Kurashige (*History, American Studies and Ethnicity*); Kwanmin Lee (*Communication*); Sonya Lee (*Art History, East Asian Languages and Cultures*); Andrew Lih (*Journalism*); Daniel Lynch (*International Relations*); Lori Meeks (*East Asian Languages and Cultures, Religion*); Lawrence Pryor (*Communication*); Gary Seaman (*Anthropology*); Brett Sheehan (*History*); Jay Wang (*Communication*); Shiing-Wu Wang (*Accounting*); Duncan Williams (*Religion*)

Assistant Professors: Brian Bernards (*East Asian Languages and Cultures*); Youngmin Choe (*East Asian Languages and Cultures*); Robeson Taj Frazier (*Communication*); Clinton Godart (*History*); Yu Hong (*Communication*); Lian Jian (*Communication*); Sunyoung Park (*East Asian Languages and Cultures*); Satoko Shimazaki (*East Asian Languages and Cultures*)

Adjunct, Research, Teaching and Visiting Faculty: Richard Drobnick (*Management and Organization*); Nansong Huang (*East Asian Languages and Cultures*); Jehoon Lee (*Social Work*); Jing Li (*APRISE*); Miya Mizuta Lippit (*East Asian Languages and Cultures*); Qingyun Ma (*Architecture*); Masako Tamanaha (*East Asian Languages and Cultures*); Paul Tang (*Architecture*); Juliana Wang (*Environmental Studies*); Geoffrey Wiseman (*International Relations and Public Diplomacy*)

Librarians: Tomoko Bialock (*Japanese Studies*); Joy Kim (*Korean Heritage Library*); Kenneth Klein (*East Asian Library*); Sun-Yoon Lee (*Korean Studies*); Lillian Yang (*Chinese*)

Emeritus Professors: Gordon Berger (*History*); Peter A. Berton (*International Relations*); Roger Dingman (*History*); Murray Fromson (*Journalism*); Charlotte Furth (*History*); William Rideout (*Education*); Otto Schnepp (*Chemistry*); John E. Wills Jr. (*History*)

Programs

The East Asian Studies Center provides interdisciplinary studies of China, Japan and Korea. It offers an undergraduate major in East Asian Area Studies, minors in East Asian Area Studies and Korean Studies, the Master of Arts in East Asian Area Studies and the Master of Arts/Master of Business Administration. Its faculty are professors from departments throughout the college and several professional schools who teach and engage in research on East Asia. The center's interdisciplinary approach allows students to acquire broad exposure to many ways of learning about the region.

The East Asian Studies Center promotes and coordinates teaching, research and development of academic programs concerning East Asia, regardless of discipline or school, on a university-wide basis. Visiting scholars may also be named from among persons outside the university who wish to do research at USC and contribute to the goals of the center.

The center also promotes and coordinates academic exchange with other institutions with which USC maintains cooperative relations in the United States and abroad. The center serves, for example, as the consortium partner with UCLA's Asia Institute to form the UCLA-USC Joint East Asian Studies Center, a Title VI National Resource Center. Graduate students with special interests in East Asia may take courses at UCLA through USC and may also work, where appropriate, with certain UCLA faculty. UCLA graduate students may similarly take courses at USC and work with USC faculty, for credit at UCLA in East Asian studies. The center facilitates cooperation and provides graduate fellowships to students at both institutions.

Undergraduate Degrees

B.A. in East Asian Area Studies Requirements

Requirements for the lower division are: EALC 110 and EASC 150 or the equivalent; a minimum of four courses in one East Asian language (or the proficiency equivalent); and seven upper-division courses approved for the major in addition to the language courses used to meet the requirements. One lower-division course other than EALC 110 and EASC 150 may be substituted for one of the seven upper-division courses. Upper-division courses must include those from at least three departments, one of which must be History. At least one course must be taken on two of the following: China, Japan or Korea.

Requirements for the Minor in East Asian Area Studies

The minor in East Asian Area Studies gives students the opportunity to supplement more narrowly defined departmental majors with a multidisciplinary focus on an area of increasingly great importance to our nation in general and our region in particular. There is no language requirement.

Twenty-four units are required from among the more than 120 courses offered on East Asia at the university. Students are required to take EALC 110 and EASC 150; and at least four upper-division four-unit courses (16 units). At least one of these courses must be from the History Department and one from the humanities area. At least one course must be taken on two of the following: China, Japan or Korea.

Minor in Korean Studies

The minor in Korean studies offers an interdisciplinary approach to studying a dynamic and crucial region. Drawing on courses from departments across the social sciences, humanities and professional schools, the minor challenges and stimulates students who wish to learn about the political, economic, social and cultural changes of the area.

Twenty units (five courses) are required. All students must take EASC 150 East Asian Societies or HIST 105 The Korean Past as a gateway course, as well as four

upper-division four-unit courses from the list below. There is no language requirement for the minor.

REQUIRED COURSES		UNITS
EASC 150	East Asian Societies, or	
HIST 105	The Korean Past	4

Four 4-unit courses from the following:

CTCS 403**	Studies in National and Regional Media	4-8, max 8
CTCS 494**	Advanced Critical Studies Seminar	4-8, max 8
EALC 315*	Advanced Korean I	4
EALC 317	Advanced Korean II	4
EALC 332	Korean Literature in English Translation	4
EALC 344	Korean Literature and Culture	4
EALC 415	Advanced Korean III	4
EALC 417	Advanced Korean IV	4
EALC 418*	Korean Writing in Mixed Script	4
EALC 419*	Newspaper and Documentary Korean	4
EALC 429	Gender in Korean Film and Literature	4
EALC 499**	Special Topics	2-4, max 8
HIST 333	Korea: The Modern Transformation	4
HIST 404	Seminar in Korean History	4
HIST 498**	Seminar on Selected Historical Topics	4, max 8
IR 499**	Special Topics	2-4, max 8

*Prerequisite: EALC 217

**For these repeatable courses, only classes with Korean-based foci will count.

Graduate Degrees

Master of Arts

The East Asian Studies Center offers an interdisciplinary master's degree in East Asian Area Studies. The program provides a wide range of language, cultural, social, historical, political and economic courses and faculty expertise; individual courses of study may be designed to meet both continuing academic and professional objectives. Students may concentrate primarily on one country (China, Japan, Korea) or develop region-wide expertise through a combination of course work and the thesis project.

Admission Requirements

Prerequisites

While an applicant for admission will normally have significant experience in East Asian language(s) and area studies as demonstrated through course work completed for the undergraduate degree, programs may be arranged for promising students without prior experience in East Asian studies. *There is no formal language requirement for admission.*

Criteria

The student should have an undergraduate record satisfactory to the center. Three letters of recommendation from professors familiar with the applicant's academic performance should be sent to the center director. All applicants are required to take the verbal and quantitative general tests of the Graduate Record Examinations.

Degree Requirements

This degree is under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue (page 97xx) for general regulations. All courses applied toward the degree must be courses acceptable to the Graduate School.

Foreign Language Requirement

Students must be able to demonstrate oral and written proficiency in Chinese, Korean or Japanese through the third year level (equivalent to six semesters) before the M.A. program is completed.

Course and Thesis Requirements

Six courses (24 units), four of which must be at the 500 level or above, plus the thesis (4 units) are required. All students must complete: (1) EASC 592; (2) EALC 531, EALC 532 or EALC 533; and (3) one other course from a Dornsife College of Letters, Arts and Sciences department. The three additional courses (12 units) may be taken from college departments or professional schools. All courses must be approved by the center director or adviser. A maximum of two courses at the 400 level may be counted toward the degree. All students must register for EASC 594ab Master's Thesis for the thesis project.

Master of Arts/Master of Business Administration

The Marshall School of Business in conjunction with the East Asian Studies Center offers a joint M.A./MBA degree that combines graduate business education with training in the cultures and societies of East Asia. Students enrolled in the joint degree program are required to complete a minimum of 72 units. All students must complete 48 units in the Marshall School of Business. Dual degree students may not count courses taken outside the Marshall School of Business toward the 48 units. In East Asian Area Studies, students have the option of taking five courses and writing a thesis (for a total of 24 units) or taking six courses and passing a comprehensive examination (for a total of 24 units).

Applicants for the joint M.A./MBA are required to follow the admission procedures for the full-time MBA program described on page 159xx. GRE scores are not required for admission into the joint program.

Required Courses

Required MBA courses: all required courses in an MBA program.

REQUIRED EASC COURSES		UNITS
EASC 592	Proseminar on Issues and Trends in Contemporary East Asia	4

and one course from the following list:

Cultural/Historical Foundations of East Asia

AHIS 518	Seminar in Chinese Art	4, max 16
AHIS 519	Seminar in Japanese Art	4, max 16
EALC 501	History of Chinese Literature	4
EALC 506	Selections from Classical Chinese Literature	4
EALC 515	Classical Japanese Poetics	4

EALC 531	Proseminar in Chinese Cultural History	4
EALC 532	Proseminar in Korean Cultural History	4
EALC 533	Proseminar in Japanese Cultural History	4
EALC 541	Seminar: Japan	4
EALC 543	Seminar: Japanese Literature	4
EALC 551	Seminar: China	4
EALC 553	Seminar: Chinese Literature	4
EALC 610	Seminar: Buddhism and the Literary Arts in Japan	4
HIST 535	Studies in Japanese History	4
HIST 536	Studies in Chinese History	2 or 4
HIST 540	Studies in Modern East Asian History	4, max 8
HIST 630	Seminar in Japanese History	2 or 4
HIST 635	Seminar in Chinese History	2 or 4

Elective Courses (Thesis Option)

During the second and third years of the program students must complete enough graduate units to bring the total number of units completed in the Marshall School of Business to 48, complete 12 units of East Asian Area Studies elective courses (three courses), and complete a four-unit thesis under the guidance of a faculty committee of three members. The subject will concern East Asia and may focus on business/finance.

Elective Courses (Comprehensive Examination Option)

During the second and third years of the program students must complete enough graduate units to bring the total number of units completed in the Marshall School of Business to 48, complete 16 units of East Asian Area Studies elective courses (four courses) and must pass a comprehensive examination in East Asian Area Studies.

Foreign Language Requirement

Students must be able to demonstrate oral and written proficiency in Chinese, Japanese or Korean language through the third year level (equivalent to six semesters) before the joint M.A./MBA program is completed. Language course work taken to meet this requirement will not count toward the minimum unit or course requirements for completion of the degree program. Therefore, students without sufficient undergraduate language course work, native speaker capability or other prior

training, are advised that additional units and course work beyond the minimum 72 units may be required in order to satisfy the foreign language requirement. USC offers beginning, intermediate and advanced Chinese, Japanese and Korean language courses during the academic year (fall/spring).

Graduate Certificate

Requirements

Graduate students interested in East Asian Area Studies must be enrolled in an advanced degree program in the Graduate School or in a professional school at the university. While preparing for an M.A., Ph.D. or other graduate degree, they may earn a certificate in East Asian Studies, which certifies special area competence beyond discipline requirements. The certificate requirements provide the student with two options. The first requires that the student write a thesis and take four graduate-credit courses in East Asian studies in any department. An oral examination is given on the thesis. The second option does not require a thesis. The student instead takes six graduate-credit courses in the East Asian area and takes an oral examination on three research papers and on relevant graduate work. As a part of both options some basic East Asian history and at least two years of study or the equivalent of an East Asian language are required. The student makes the basic decisions on the program to be followed in consultation with a three-member interdisciplinary committee approved by the Director of the East Asian Studies Center.

For further information, interested students may write to: Director, East Asian Studies Center, College House 101, University of Southern California, Los Angeles, CA 90089-0127.

Courses of Instruction

EAST ASIAN STUDIES (EASC)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

EASC 150g East Asian Societies (4, FaSp) Main patterns of change in modern China, Japan, and Korea; historical framework and the insights of geography, economics, political science, and other disciplines.

EASC 160gm China and the World (4, FaSp) Advanced-level introduction to China and its relations with the wider world in historic and contemporary perspective.

EASC 360 Global East Asia (4, max 12, Sm) Summer study abroad program to China, Japan or Korea with a focus on globalization. *Recommended preparation:* two language and/or area studies courses related to country of study; recommended course list provided by EASC.

EASC 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

EASC 499 Special Topics (2-4, max 8, Irregular) Interdisciplinary examination of various areas of East Asian studies.

EASC 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

EASC 591 Interdisciplinary Seminar (4, max 8, Irregular) An examination of a broad topic in the study of China, Korea, or Japan. Guest speakers, student reports, papers. Readings in English and the appropriate Asian language(s).

EASC 592 Proseminar on Issues and Trends in Contemporary East Asia (4, 2 years, Fa) Introduction to graduate level study of policy issues and major trends in contemporary China, Japan, and Korea; contributions of various academic disciplines.

EASC 593x Understanding East Asia: An Introduction for Professional School Students (3, Sp) Historical, social, political and cultural survey of China, Japan and Korea with focus on topics of particular relevance for business practitioners and other professionals. Not available for degree credit to East Asian Area Studies degree candidates.

EASC 594abz Master's Thesis (2-2-0, FaSpSm) Credit on acceptance of thesis. Graded IP/CR/NC.

EASC 599 Special Topics (2-4, max 8, FaSpSm) Special topics in East Asian Area Studies.

East Asian Languages and Cultures

Taper Hall of Humanities 356

(213) 740-3707

FAX: (213) 740-9295

Email: ealc@dornsife.usc.edu
usc.edu/schools/college/ealc

Chair: David T. Bialock, Ph.D.

Faculty

Professors: Dominic C.N. Cheung, Ph.D.; Namkil Kim, Ph.D.; Audrey Li, Ph.D.; Akira Mizuta Lippit, Ph.D. (*Cinematic Arts*); Andrew Simpson, Ph.D. (*Linguistics*)

Associate Professors: David T. Bialock, Ph.D.; Bettine Birge, Ph.D.; Joshua Goldstein, Ph.D. (*History*); George A. Hayden, Ph.D.; Hajime Hoji, Ph.D. (*Linguistics*); Sonya Lee, Ph.D. (*Art History*); Lori Meeks, Ph.D. (*Religion*)

Assistant Professors: Brian Bernards, Ph.D.; Youngmin Choe, Ph.D.; Sunyoung Park, Ph.D.; Satoko Shimazaki, Ph.D.

Emeritus Professor: Henry H.Y. Tsee, Ph.D.

Associated Faculty: Joan Piggott, Ph.D. (*History*)

East Asian Languages and Cultures offers undergraduate, master's and doctoral programs in Chinese, Japanese and Korean studies, and a progressive degree in East Asian Languages and Cultures. The department fosters original approaches in East Asian studies. With an emphasis on interdisciplinary and innovative research, the program provides students with systematic training in East Asian languages, literatures and cultures.

The faculty is committed to intra-regional and interdisciplinary studies of East Asia, which includes critical interaction among the cultures of China, Japan and Korea, as well as integration of modern and pre-modern

studies. The department engages the arts, languages, linguistics, literatures, histories, media, religions, visual and material cultures of East Asia.

Undergraduate Degree

Bachelor of Arts in East Asian Languages and Cultures Requirements

For the lower division, two years of Chinese, Japanese or Korean language are required. For the upper division, 32 units, including the third year of language, are required. The 32 units of upper-division courses must also include one civilization course, one literature course and four upper-division elective courses (16 units) in Chinese, Japanese or Korean. One lower-division course may be counted toward the 16 units of upper-division electives. One East Asian course from another department may be included in the 32 unit requirement, if approved by an adviser.

Honors Program

Candidates for the B.A. in the Department of East Asian Languages and Cultures may receive a designation on their transcripts of departmental honors. Admission to the honors program is required.

Prerequisites: 3.33 overall GPA, 3.5 GPA or better in courses in the major, completion of at least one upper-level EALC course requiring a seminar paper at the time of admission, submission of an application form to the undergraduate faculty adviser.

Required for departmental honors: Maintain GPA requirements stated above and complete EALC 495ab Undergraduate Honors Thesis.

East Asian Languages and Cultures Minor Requirements

For the lower division, two years of language in one of three languages (Chinese, Japanese and Korean) are required. For the upper division, four 4-unit courses, including one civilization course, one literature course and two upper-division elective courses in Chinese, Japanese or Korean are required.

Cultures and Politics of the Pacific Rim Minor Requirements

This interdisciplinary minor introduces students to the cultural heritage and political contexts of the United States' most important trading partners on the Pacific Rim. Students study East Asia and Latin America, and the cultural, economic and political dimensions of international trade. It is intended for students who are interested in or considering diplomatic or commercial careers that require knowledge about the people and cultures of the Pacific Rim.

As with all minors, students must choose at least four classes dedicated to this minor and four classes outside their major department, which may be the same four courses.

REQUIREMENTS (FIVE COURSES, 20 UNITS)

UNITS

International Trade (choose one course from the list below)

ECON 450	International Trade (prerequisite: ECON 303 or BUAD 351)	4
IR 325	Rich and Poor States in the World	4
IR 330	Political Economy of the World	4
IR 470	Politics of the World Economy	4
	Comparative Regionalism (prerequisite: IR 210)	4
POSC 345	International Law	4
POSC 451	Politics of Resources and Development	4

Area Studies (choose two courses, each from a different list below)

Latin America:		
AHIS 319	Mesoamerican Art and Culture	4
ANTH 314	The Nature of Maya Civilization	4
ANTH 328	Culture Change and the Mexican People	4
ANTH 425	Peoples and Cultures of Latin America	4
HIST 372	Modern Latin America	4
HIST 374	History of Mexico	4
HIST 451	The Mexican Revolution	4
HIST 473	Colonial Latin America Seminar	4

IR 364	The Political Economy of Latin American Development	4
IR 365	Politics and Democracy in Latin America	4
POSC 350	Politics of Latin America	4
SPAN 320	Iberian and Latin American Cultures: Readings on Society (in Spanish)	4
SPAN 321	Iberian and Latin American Cultures: Readings on the Arts (in Spanish)	4
SPAN 372	Modern and Contemporary Latin American Fiction (in Spanish)	4
SPAN 380	Literature of Mexico (in Spanish)	4

East Asia:		
ANTH 323	Regional Ethnology: Southeast Asia	4
ECON 343	Economic Development of East Asia (prerequisite: ECON 203 or ECON 205)	4
IR 358	The Asia Pacific in World Affairs	4
IR 360	International Relations of the Pacific Rim	4
IR 361	South and Southeast Asia in International Affairs	4
IR 384	Introduction to Asian Security	4
POSC 352	Politics of Southeast Asia	4
POSC 355	Politics of East Asia	4
POSC 377	Asian Political Thought	4

POSC 453	Political Change in Asia	4
REL 331	Religions of East Asia	4

Country Study (choose two courses from the lists below)

China:		
AHIS 384	Early Chinese Art	4
AHIS 385	Later Chinese Art	4
ANTH 324	Regional Ethnology: China	4
EALC 350	Chinese Civilization	4
EALC 352	Chinese Literature and Culture	4
EALC 354	Modern Chinese Literature in Translation	4
EALC 355	Studies in Chinese Thought	4
EALC 375	Women and Gender in China: Past and Present	4
HIST 338	China to 960 A.D.	4
HIST 339	China, 960–1800 A.D.	4
HIST 340	History of China since 1800	4
IR 333	China in International Affairs	4
POSC 356	Politics in the People's Republic of China	4

Japan:		
AHIS 386	Early Japanese Art	4
AHIS 387	Later Japanese Art	4
EALC 340	Japanese Civilization	4
EALC 342	Japanese Literature and Culture	4
EALC 365	Studies in Japanese Thought	4
EALC 428	Nature and the Ecological Imagination in Japanese Literature	4
EALC 460	Love, Self and Gender in Japanese Literature	4
HIST 335	History of Japan to 1550	4
HIST 336	History of Japan, 1550–1945	4
HIST 337	Japan since 1945	4
HIST 438	Seminar in Pre-Modern Japanese History	4
HIST 464	Culture, Money, and Power: Japanese-American Relations since 1853	4
IR 442	Japanese Foreign Policy	4
POSC 354	Japanese Politics	4

Korea:		
EALC 332	Korean Literature in English Translation	4
EALC 335	Korean American Literature	4
EALC 345	Korean Civilization	4
HIST 333	Korea: The Modern Transformation	4

Study Abroad Programs

East Asian Languages and Cultures majors and minors are encouraged to take advantage of the numerous semester and year-long study abroad opportunities sponsored by the Office of Overseas Studies. Currently, the office offers programs in China (Beijing and Nanjing), Taiwan (Taipei), Korea (Seoul), and Japan (Tokyo, Nagoya). Each of the programs is affiliated with a world class institution, such as Waseda University in Tokyo, National Chengchi University in Taipei or Yonsei University in Seoul. Contact the Office of Overseas Studies at

(213) 740-3636 for further details or visit them online at dornsife.usc.edu/overseas.

The majority of course work offered by these programs may be counted toward the EALC major or minor requirements. Students who receive major credit from any of these programs must still take at least eight units of non-language courses within EALC at the upper-division level while at USC (specifically an EALC civilization and an EALC literature course). Students interested in attending one of these programs must meet with an EALC academic adviser to ensure that the courses enrolled in overseas will meet EALC major or minor requirements.

Chinese Summer Program in Beijing

The Department of East Asian Languages and Cultures offers its Chinese language summer courses in Beijing. Participants will be able to transition seamlessly to the next level courses upon returning to campus. Cultural visits and excursions will be included in the tuition fee. All courses count toward a major and minor in East Asian Languages and Cultures.

Bachelor of Arts with a Combined Major in Linguistics/East Asian Languages and Cultures

See Department of Linguistics, page 396xx.

Progressive Degree Program in East Asian Languages and Cultures

The progressive degree program permits exceptional undergraduate students to receive both a Bachelor of Arts and a Master of Arts in East Asian Languages and Cultures within five years. It is intended for students with extraordinary EALC preparation and performance who demonstrate a superior level of overall scholarship.

Admission

Applicants may apply after the completion of 64 units of course work applicable to their undergraduate degree since graduating from high school. (AP units, IB units and course work taken prior to high school graduation are excluded). Applicants must submit their applications before completing 96 units of course work. Normally, the application is submitted in the fall semester of the third year of enrollment at USC. The application for admission to a progressive degree program must be accompanied by a departmentally approved course plan proposal and two letters of recommendation from USC faculty members in the Department of East Asian Languages and Cultures.

Awarding of Degrees

Progressive degree program students must fulfill all of the requirements for both the bachelor's degree and the master's degree, including a master's thesis. The unit requirement for the master's degree can be reduced by as much as one-third. The degrees may be awarded separately, but the master's degree will not be awarded before the undergraduate degree.

Time Limits

The time limit for completing a progressive degree program is 12 semesters.

Further details about progressive degrees can be found on page 87xx.

Graduate Degrees

Master of Arts in East Asian Languages and Cultures

The Department of East Asian Languages and Cultures offers instruction in the languages, literatures and cultures of East Asia. The graduate program offers the master's degree with specialties in Chinese, Japanese and Korean. Programs of study may emphasize foreign language teaching, applied linguistics, literature, thought, religions or area studies.

Admission Requirements — Prerequisites

An applicant for admission will normally have the equivalent of an undergraduate major in East Asian languages and cultures at USC, but programs may be arranged for promising students who do not have the prerequisites. Such students may be required to make up the deficiencies.

Criteria

All applicants are required to take the Graduate Record Examinations verbal and quantitative General Test and submit their complete undergraduate record: at least three letters of recommendation and a statement of purpose should be sent to the chair of the department. Applicants are urged to submit written materials as supporting evidence.

Degree Requirements

These degrees are under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue (page 97xx) for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School.

Foreign Language Requirement

Competence is required in Chinese, Japanese or Korean.

Course Requirements

Six courses, four of which must be at the 500-level or above, are required. Those students whose concentration is in language and literature should take a fourth year of language.

Final Research Paper

The research paper must demonstrate the student's ability to use source materials in the East Asian language of his or her area.

Doctor of Philosophy in East Asian Languages and Cultures

Course Requirements

A student's total graduate course work must be at least 60 units including 4 units of doctoral dissertation (794ab) and the following courses:

CORE COURSES		UNITS
EALC 505	Introduction to East Asian Languages and Cultures	4
COLT 601	Professional Development I: Applying for Positions	2
COLT 603	Professional Development II: Publication	2

A theory and methodology course in EALC or an equivalent course in a related program.

Four courses on East Asian languages and literatures.

Four courses on East Asian cultures and civilizations.

Three additional courses in a target discipline or field.

No more than four courses at the 400-level may be applied to the total requirement of 60 units. The fulfillment of the course requirements is determined by the Graduate Studies Committee in EALC.

Screening Procedure

A screening procedure will be conducted before the student completes 24 units of course work, which typically means by the end of the first year. The Graduate Studies Committee will review the student's performance comprehensively and meet the student after a statement describing his/her research ideas is submitted.

Qualifying Exam Committee

Upon successful completion of the screening procedure, the student is encouraged to begin forming a five-member qualifying exam committee, whose purpose is to help the student prepare for the qualifying examination. The committee must be approved by the Graduate School at the time the student applies to schedule a qualifying examination.

Qualifying Procedure

A student takes examinations in three different fields approved by the qualifying exam committee. An oral examination based on the written exams will follow. After successful completion of the examinations, the student will submit a dissertation prospectus, which must be approved by the qualifying exam committee and the Graduate Studies Committee in EALC.

Foreign Language Requirement

A student must have at least four years of course work or its equivalent in the language of his/her specialization. In addition, the student should acquire or demonstrate competence in a second East Asian language. This requirement may be met by two years' worth of course work. Whether the second East Asian language should be classical or modern will be determined by the Graduate Studies Committee in consultation with a student's academic adviser.

Dissertation

Defense and presentation of the dissertation will follow regulations defined by the Graduate School.

Certificate in Foreign Language Teaching

The certificate in Foreign Language Teaching provides certification in the theory and practice of second or foreign language teaching for student language teachers concurrently enrolled in graduate degree programs in foreign languages or related graduate programs at USC; for graduates of such programs who are teaching languages; for external candidates concurrently enrolled in similar programs at accredited colleges or universities; or for graduates of such programs who are teaching languages. The certificate is meant to supplement

graduate study in the literature or linguistics of foreign languages. It is also meant to supplement classroom teaching. Refer to the Department of Spanish and Portuguese (page 477xx) for course work requirements.

Courses of Instruction

EAST ASIAN LANGUAGES AND CULTURES (EALC)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

EALC 101x Conversational Chinese and Intercultural Communication (2, FaSp) Basic Mandarin conversational skills for effective communication in familiar, everyday Chinese contexts and better understanding of intercultural communication through content-based language acquisition. Not available for credit to East Asian Area Studies and East Asian Languages and Cultures majors and minors. Graded CR/NC.

EALC 102 Language, Art and Culture: Calligraphy (2, FaSp) This course introduces students to the origin of the basic Chinese scripts and the basic principles and styles of calligraphy.

EALC 103ab Online Chinese I (2-2, FaSpSm) Basic listening, speaking, reading and writing abilities in Mandarin Chinese. Instruction includes individual meetings and online content. (Duplicates credit in EALC 104).

EALC 104 Chinese I (4, FaSpSm) The sound system of modern Chinese; aural comprehension, oral expression, basic patterns, and writing system.

EALC 106 Chinese II (4, FaSpSm) Dialogue practice and conversation; reading of simple stories and essays; comparison of Chinese and English grammar; writing of paragraphs. *Prerequisite:* EALC 104.

EALC 108 Reading and Writing Chinese (4, FaSp) The basics of reading and writing modern Chinese; intensive reading and writing of paragraphs, essays, and stories; extensive reading of beginner-level authentic materials.

EALC 110g East Asian Humanities: The Great Tradition (4, FaSp) Introduction to the major humanities traditions of China, Japan, and Korea through an examination of representative works drawn from literature, aesthetics, philosophy, religion, and historical writing.

EALC 115 Korean I (4, FaSpSm) Aural comprehension and oral practice; the writing system; grammar drill, sentence patterns. Lecture, 5 hours; additional hours for drill and laboratory.

EALC 117 Korean II (4, FaSpSm) Continuation of EALC 115. Progressive drill in dialogue, reading, and writing. Lecture, 5 hours; additional hours for drill and laboratory. *Prerequisite:* EALC 115.

EALC 120 Japanese I (4, FaSpSm) Basic Japanese conversation practice, basic grammar and building proficiency of reading and writing Hiragana and Katakana (Japanese alphabetical systems).

EALC 121 Extensive Reading in Japanese I (2, max 4, FaSp) Development of reading skill in Japanese for elementary level students through short stories written for learners of Japanese and authentic materials written for native Japanese speakers. *Prerequisite:* EALC 120.

EALC 122 Japanese II (4, FaSpSm) Continuation of EALC 120. Basic Japanese conversation practice, basic grammar and building proficiency of reading and writing Hiragana and Katakana and basic kanji. *Prerequisite:* EALC 120.

EALC 125g Introduction to Contemporary East Asian Film and Culture (4) An introduction to and overview of the contemporary cinemas of East Asia: China (Hong Kong, the People's Republic, and Taiwan), Japan, and Korea.

EALC 130g East Asian Ethical Thought (4, FaSp) Introduction to the history of Chinese, Japanese, and Korean ethical thought; perspectives on human nature, historical writing, religious options, and aesthetic implications. Conducted in English.

EALC 145g Introduction to Chinese Culture, Art and Literature (4, FaSp) Introduction to the civilization, art and literature of pre-modern China through the lens of the cultural products of identity.

EALC 150g Global Chinese Cinema and Cultural Studies (4, FaSp) Examination of the transnational production and circulation of Chinese-language cinema. Analysis of the larger sociocultural significance of films by engaging their historical context.

EALC 204 Chinese III (4, Fa) Conversational practice: reading of stories and essays; writing of short essays. *Prerequisite:* EALC 106.

EALC 206 Chinese IV (4, Sp) Continuation of 204, with emphasis on reading and writing, frequent interaction with native speakers. *Prerequisite:* EALC 204.

EALC 215 Korean III (4, Fa) Drill to increase proficiency in dialogue, reading, and writing; intermediate level readings. *Prerequisite:* EALC 117.

EALC 217 Korean IV (4, Sp) Advanced level reading of modern Korean and exercises in written composition. *Prerequisite:* EALC 215.

EALC 220 Japanese III (4, FaSpSm) Continuation of EALC 122. Conversation practice, basic to intermediate grammar, and building proficiency of reading and writing Hiragana and Katakana with additional kanji. *Prerequisite:* EALC 122.

EALC 221 Extensive Reading in Japanese II (2, max 4, FaSp) Development of reading skills in Japanese for intermediate level students through short stories written for learners of Japanese and authentic materials written for native Japanese speakers. *Prerequisite:* EALC 220.

EALC 222 Japanese IV (4, FaSpSm) Continuation of EALC 220. More sophisticated grammar and vocabulary for natural conversation. Enhancing fundamental reading and writing skills, expanding the knowledge of kanji. *Prerequisite:* EALC 220.

EALC 264g Asian Aesthetic and Literary Tradition (4) (Enroll in COLT 264g)

EALC 304 Advanced Modern Chinese I (4, Fa) Reading selections from different styles of modern Chinese writings, analysis of stylistic techniques and syntactic structure, composition, and translation. *Prerequisite:* EALC 206.

EALC 306 Advanced Modern Chinese II (4, Sp) Continuation of EALC 304; composition exercises in different styles of writing. *Prerequisite:* EALC 304.

EALC 315 Advanced Korean I (4, Fa) Advanced reading in modern Korean materials; improvement of skills in conversation, composition, and translation. *Prerequisite:* EALC 217.

EALC 317 Advanced Korean II (4, Sp) Continuation of EALC 315, with emphasis on the use of Chinese characters, translation, and composition exercises. *Prerequisite:* EALC 315.

EALC 318 Readings in Contemporary Korean (4, FaSpSm) Selected readings in a variety of Korean styles. Materials are from essays, short stories and newspapers. *Prerequisite:* EALC 217.

EALC 320 Advanced Japanese I (4) Strengthen intermediate Japanese language proficiency. Oral/aural communication skills as well as reading and writing skills. Promote an understanding of the present-day Japanese culture. *Prerequisite:* EALC 222.

EALC 322 Advanced Japanese II (4, FaSp) Continuation of EALC 320. Improve and strengthen abilities to speak, listen, read and write, coping with more involved materials and situation. *Prerequisite:* EALC 320.

EALC 332 Modern Korean Literature in Translation (4, Fa) Introduction to Korean literature, with discussion of critical approaches to literary discourse, historical contexts of literary production, and aspects of contemporary popular culture.

EALC 333 Introduction to Korean Film (4, Fa) Survey of Korean film, the film industry, and critical issues from the colonial period to the present.

EALC 334 Chinese Language Through Films and Television (4, FaSp) Enhancement of functional, advanced-level Mandarin proficiency for vocabulary, grammar, listening, speaking, reading, writing, and cultural awareness through selected Chinese-language films and television programs. *Prerequisite:* EALC 206.

EALC 335m Korean American Literature (4) Survey of Korean American literature from the mid-20th century until the most recent years. Focus on issues and topics central to Korean American experience.

EALC 336 Chinese Language through Films and Television II (4, FaSp) Further enhancement of functional, advanced-level Mandarin proficiency for vocabulary, grammar, listening, speaking, reading, writing, and cultural awareness through selected Chinese-language films and television programs. *Prerequisite:* EALC 304 and EALC 334.

EALC 340g Japanese Civilization (4, FaSp) Survey of the main characteristics and development of art, literature, philosophy, religion, political and social institutions through different periods. Conducted in English.

EALC 342g Japanese Literature and Culture (4, FaSp) Japanese literature from the earliest times to the present; development of prose, poetry and the novel; evolution of theatre; Japanese literature under Western influence. Conducted in English.

EALC 344g Korean Literature and Culture (4, Sp) The history of Korean literature and culture from the ancient to the modern era. *Recommended preparation:* HIST 105.

EALC 345 Korean Civilization (4) Survey of the main characteristics and development of Korean art, literature, philosophy, religion, political and social institutions through different periods. Conducted in English.

EALC 350g Chinese Civilization (4, FaSp) Characteristics and aspects of Chinese civilization; interpretation of philosophy, literature, religion, art, music. Conducted in English.

EALC 352g Chinese Literature and Culture (4, FaSp) Readings of Chinese poetry, prose, novels and drama; influence of the West on Chinese literature and culture in modern times. Conducted in English.

EALC 354g Modern Chinese Literature in Translation (4) Readings in modern Chinese poetry, fiction, and drama since 1919.

EALC 355 Studies in Chinese Thought (4) Chinese thought, particularly as formulated in the three great traditions: Confucianism, Taoism, Buddhism.

EALC 365 Studies in Japanese Thought (4) Influence of native traditions and imported Chinese traditions on Japanese civilization; religious, ethical, aesthetic, and political aspects.

EALC 374 Language and Society in East Asia (4) The interaction of language with society in countries of East Asia: language and identity, the politicization of language, language change, language and gender.

EALC 375 Women and Gender in China: Past and Present (4) An examination of changes in sex roles and in constructs of the female as influenced by traditional Chinese thought and later social developments.

EALC 380 Cultural Topics in East Asian Literature (4) Selected themes, genres, and periods in East Asian literature, e.g., Taoism and Buddhism, women, folktales.

EALC 381 Visual Culture of Asia (4, max 8, FaSp) (Enroll in AHIS 381)

EALC 383 Later Chinese Art (4) (Enroll in AHIS 385)

EALC 384 Early Chinese Art (4) (Enroll in AHIS 384)

EALC 386 Readings in Modern Korean Literature (4) Selected readings from modern Korean short stories, novels, plays and essays. Readings will be in English and Korean. *Prerequisite:* EALC 217.

EALC 387 Early Japanese Art (4) (Enroll in AHIS 386)

EALC 388 Later Japanese Art (4) (Enroll in AHIS 387)

EALC 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

EALC 400 Classical Chinese I (4) Introduction to the classical styles, selections from classical style writings, contrastive analysis of modern and classical Chinese, translation and writing practice. *Prerequisite:* EALC 206.

EALC 402 Classical Chinese II (4) Continuation of EALC 400.

EALC 404 Advanced Modern Chinese III (4, Fa) Readings in modern Chinese literary, documentary, and epistolary styles; stylistic and syntactic analysis; composition; translation. *Prerequisite:* EALC 306.

EALC 406 Advanced Modern Chinese IV (4, Sp) Continuation of EALC 404.

EALC 407 News and Web Chinese (4) Reading selections from newspaper articles and online reports to further develop proficiency in advanced Chinese and understanding of the society and culture. *Prerequisite:* EALC 306.

EALC 410 Chinese-English Translation (4) Structure, vocabulary, and techniques of written translation and oral interpretation; classroom and laboratory practice; English-Chinese and Chinese-English.

EALC 412ab Business Chinese (4-4) a: Practice in the basic vocabulary and idioms of foreign trade and other commercial transactions in Mandarin. *Prerequisite:* EALC 306. *b:* Continuation of EALC 412a.

EALC 413 Business Japanese (4, FaSpSm) Practical advanced level Japanese business terms and their usage in a variety of business situations; cultural insights on Japanese customs that underline business transactions in Japan. *Prerequisite:* EALC 322.

EALC 415 Advanced Korean III (4, Fa) Selected readings in Korean texts, pre-modern and modern, in various literary and non-fiction genres; focus on developing reading and translation skills. *Prerequisite:* EALC 317.

EALC 416 Advanced Chinese Oral Communication (2, FaSp) Enhancement of advanced conversational skills through descriptions, summaries of texts, active participation in discussions, debates and oral presentations in class. Graded CR/NC. *Prerequisite:* EALC 406.

EALC 417 Advanced Korean IV (4, Sp) Continuation of EALC 415.

EALC 418 Korean Writing in Mixed Script (4, FaSp) Selected readings in Korean texts written in mixed script; a systematic study of Chinese characters and translation of text. *Prerequisite:* EALC 217.

EALC 419 Newspaper and Documentary Korean (4, FaSp) Selected readings from newspapers, magazines, and other journalistic publications; analysis of styles and practice in writing articles. *Prerequisite:* EALC 217.

EALC 422 Advanced Japanese III (4, Fa) Students develop advanced levels of Japanese linguistic knowledge and communication skills through speaking, listening, reading and writing activities using authentic Japanese texts and discourse. *Prerequisite:* EALC 322.

EALC 424 Advanced Japanese IV (4, Sp) Continuation of EALC 422. Students continue to improve their Japanese language competence in the course of acquiring Japanese pragmatic skills and cultural knowledge. *Prerequisite:* EALC 422.

EALC 426 Classical Japanese (4) Introduction to the fundamentals of classical grammar; readings from various classical works, both poetry and prose; translation practice. *Prerequisite:* EALC 322.

EALC 427 Women's Lives in Premodern Japanese Literature (4, Fa) The social lives of women in ancient and medieval Japan as viewed through poetry, memoir, tale literature, legal documents, and personal correspondence. *Recommended preparation:* Any course in Japanese literature or civilization.

EALC 428 Nature and the Ecological Imagination in Japanese Literature (4, FaSpSm) Examination of cultural perceptions about nature and how they affect attitudes toward the environment: includes comparisons to Euro-American as well as other East Asian traditions.

EALC 429 Gender in Korean Film and Literature (4, Sp) Changing representations of gender in Korean films and literary works over the course of the 20th century. *Recommended preparation:* HIST 105 and EALC 332.

EALC 430 Gender and Sexuality in Korean Literature and Culture (4) Examination of the changing representations of gender and sexuality in Korean cultural texts over the course of the 20th century.

EALC 431 The Taoist Tradition (4) Close reading of primary text(s) of early Chinese Taoist thinkers (in translation), along with analysis of relevant secondary scholarship. *Recommended preparation:* EALC 355 or REL 131.

EALC 452 Chinese Fiction (4) Development of Chinese fiction and readings from English translations of major Chinese novels such as the *Dream of the Red Chamber*, *All Men are Brothers*, and others. Conducted in English.

EALC 454 Bildungsroman in Modern East Asia (4, Sp) Comparative study of core narratives of youth and its destiny in modern literature from China, Japan, Korea, and Taiwan. Readings include scholarship on European literature.

EALC 455 Japanese Fiction (4) Japanese fiction from early to modern times; literary, philosophical, and social aspects of tales and novels. Conducted in English.

EALC 460 Love, Self and Gender in Japanese Literature (4, Sp) Examines conceptions of love, self, gender, and sexuality in Japanese literature and culture of the modern and pre-modern periods with comparisons to European and Chinese literature.

EALC 465 Topics in Korean Visual and Cultural Studies (4, FaSp) Examination of dominant and emergent critical issues in the study of modern and contemporary Korean visual culture.

EALC 470 Introduction to East Asian Linguistics (4) Survey of the sound systems, writing systems, grammatical systems, historical development, and social environments of the Chinese, Japanese, and Korean languages. *Prerequisite:* EALC 406 or EALC 417 or EALC 424.

EALC 480 Marxism and Culture in East Asia (4, FaSp) Intensive reading on current transnational issues in the study of East Asian or Asian cultures.

EALC 481 Studies in Japanese Art (4, max 16) (Enroll in AHIS 481)

EALC 484 Studies in Chinese Art (4, max 16) (Enroll in AHIS 484)

EALC 490x Directed Research (1–8, max 12) Individual research and readings. Not available for graduate credit.

EALC 494ab Honors Thesis (4, Fa; 4, Sp) Research and writing of original thesis under guidance of faculty member. Open only to EALC majors.

EALC 499 Special Topics (2–4, max 8)

EALC 500 Advanced Classical Chinese I (4) Reading in classical Chinese and practice in classical vocabulary and syntax, with emphasis on translation into English and modern Chinese. *Prerequisite:* EALC 402.

EALC 501 History of Chinese Literature (4) An in-depth survey of literary development concerning periods, thought, genres, and socio-cultural backgrounds in China. In English.

EALC 502 Advanced Classical Chinese II (4) Continuation of EALC 500. *Prerequisite:* EALC 500.

EALC 503 Chinese Poetry (4) Literary studies of the theory and practice of Chinese poetry from major poets. *Prerequisite:* 4th year Chinese.

EALC 504 Selections from Modern Chinese Literature (4) Literary currents and representative writings of the 20th century. *Prerequisite:* EALC 306.

EALC 505 Introduction to East Asian Languages and Cultures (4, FaSp) An in-depth introduction to East Asian studies. Open to graduate students only.

EALC 506 Selections from Classical Chinese Literature (4) Writings of the important periods and genres of Chinese literary history. *Prerequisite:* EALC 406.

EALC 507 East Asia in Cross-Cultural Theories (4, FaSp) Introduction to major theoretical paradigms particularly relevant to the study of East Asian cultures. Seminal Western theoretical texts with studies on East Asia.

EALC 509 Transnational Korean Cinema (4, Fa) Korean cinema since the early 20th century, focusing on transnational production, circulation, and consumption. Open to graduate students only.

EALC 510 Contemporary Japanese Cinema (4, Fa) Japanese cinema since the 1980s focusing on the works by filmmakers.

EALC 512 Japanese Literature and Film (4, FaSp) Relationship between Japanese literature and film, focusing on the transition from literary text to film text. Open to graduate students only.

EALC 515 Classical Japanese Poetics (4) An analysis of major texts of the Japanese literary tradition from the 8th to the 16th century.

EALC 520 Modern Japanese Writers (4) Selections illustrative of major literary trends and literary works since the Meiji Restoration. *Prerequisite:* EALC 422.

EALC 522 Classical Japanese Writers (4) Writings representative of important periods and genres of Japanese literary history up to the Meiji Restoration. *Prerequisite:* EALC 426.

EALC 530 Race, Ethnicity, and Multiculturalism in East Asia (4, Sp) Examination of scholarship and cultural production on issues and theories of race, ethnicity, and multiculturalism in East Asia (China, Japan, Korea, and Southeast Asia).

EALC 531 Proseminar in Chinese Cultural History (4) Intensive readings in English concerning interpretive issues in the study of Chinese cultural history.

EALC 532 Proseminar in Korean Cultural History (4) Introduction to Korean cultural and social history through intensive reading of the English-language literature on Korean history and culture.

EALC 533 Proseminar in Japanese Cultural History (4) Intensive readings, chronologically arranged, in interpretive issues in the study of Japanese cultural history. Readings in English.

EALC 534 Modernity and Cultural Representation in Korea (4, FaSp) In-depth introduction to the cultural history, including emerging trends and new methodologies within modern Korean literary and cultural studies.

EALC 535 Proseminar in Chinese Visual Culture (4, FaSp) Chinese visual culture through the complex interface of art and thought. Examines architectural layout, pictorial representation, decorative motif as part of cultural production that intertwines with intellectual trends.

EALC 536 Studies in Modern Japanese History (4) (Enroll in HIST 534)

EALC 537 Structure of the Korean Language (4) Description and theoretical analysis of phonology, morphology and syntax of modern Korean; comprehensive view of the properties of the Korean structure. *Prerequisite:* EALC 470.

EALC 541 Seminar: Japan (4) Social, economic, political, and cultural problems in modern Japan. Bibliographic and reference materials. *Prerequisite:* HIST 436.

EALC 543 Seminar: Japanese Literature (4) Readings in original texts in the works of selected major writers; lectures dealing with intellectual and cultural backgrounds of the periods and the authors. *Prerequisite:* EALC 520, EALC 522.

EALC 545 Japanese Literary Criticism and Theory (4) Representative theories of literature; history of classical and modern literary criticism. *Prerequisite:* EALC 520, EALC 522.

EALC 547 Structure of the Japanese Language (4) Descriptive analysis of phonetic, phonological, and grammatical structure of Japanese. Conducted in English. *Prerequisite:* EALC 470.

EALC 551 Seminar: China (4) Individual research and seminar reports on selected phases of Chinese traditional civilization.

EALC 553 Seminar: Chinese Literature (4) Research in different genres of Chinese literature, traditional and modern.

EALC 555 Chinese Literary Criticism and Theory (4) Classical and modern literary theories and criticism; comparisons with literary theory and criticism in the West.

EALC 556 Seminar on Women and the Family in China (4) An introduction to the current state of research on women and the family in China, and training in feminist analytic approaches for further work in the China field of other areas.

EALC 557 Structure of the Chinese Language (4) Descriptive analysis of phonology, morphology, and syntax of modern Chinese. Conducted in English. *Prerequisite:* EALC 404.

EALC 558 History of the Chinese Language (4) Evolution of the Chinese language from the earliest time to the present: lectures and the reading of texts. Conducted in English. *Prerequisite:* EALC 557.

EALC 560 Comparative Syntax of East Asian Languages (4, max 12, FaSp) Descriptive-comparative study of the Chinese, Japanese and Korean languages with an emphasis on their structures, range of properties, similarities and dissimilarities. *Prerequisite:* EALC 537 or EALC 547 or EALC 557.

EALC 561 Topics and Issues in East Asian Linguistics (4, max 12) Descriptive and theoretical analysis of the grammars of Chinese, Japanese, and Korean; emphasis on comparative studies of these languages and English.

EALC 562 Teaching of the East Asian Languages (4) Materials and methods in teaching East Asian languages; application of methods and techniques of foreign/second language teaching to East Asian language teaching. *Prerequisite:* EALC 537 or EALC 547 or EALC 557.

EALC 565 Bibliography and Research Methods in Chinese Studies (4) An introduction to reference works and research methods in all fields on sinology; works in Chinese, Japanese and Western languages.

EALC 570 Narratives of Desire in Modern Chinese Literature (4, FaSp) The study of prominent fiction women writers from the first half of the 20th century in English and original translations. Open to graduate students only. *Prerequisite:* EALC 553.

EALC 575 Literary and Artistic Movements in Modern China (4, FaSp) Introduction to literary and artistic movements in 20th century China. Open to graduate students only.

EALC 580 Readings in East Asian Linguistics (4, max 12, FaSp) Survey of some representative works in generative grammar since the mid '60s, including those that deal with similar phenomena in the contexts of more recent theoretical frameworks as well as non-generative grammatical works on Chinese, Japanese, and Korean.

EALC 588ab Directed Readings (2-2) Assigned readings according to individual needs.

EALC 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

EALC 593 Practicum in Teaching the Liberal Arts (2, FaSp) (Enroll in MDA 593)

EALC 594abz Master's Thesis (2-2-0) Credit on acceptance of thesis. Graded IP/CR/NC.

EALC 599 Special Topics (2-4, max 8, FaSpSm) Special topics in East Asian Languages and Cultures.

EALC 601 Professional Development I: Applying for Positions (2, Fa) (Enroll in COLT 601)

EALC 603 Professional Development II: Publication (2, Sp) (Enroll in COLT 603)

EALC 610 Seminar: Buddhism and the Literary Arts in Japan (4) Seminar on the impact of Buddhism on the literary tradition of medieval Japan. Selected topics.

EALC 620 Seminar in East Asian Linguistics (4, max 12, FaSp) Detailed theoretical discussions and empirical studies of the issues and development in East Asian linguistics.

EALC 650 Research Seminar in Chinese Documents (4) An introduction to the different genres of documents for the study of Chinese civilization, and training in their use.

EALC 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC.

Economics

Kaprielian Hall 300
(213) 740-8335
FAX: (213) 740-8543
Email: econ@dornsife.usc.edu
Chair: Geert Ridder, Ph.D.

Faculty

John E. Elliott Distinguished Chair in Economics:
M. Hashem Pesaran, Ph.D.

Presidential Professor of Health Economics: Daniel
McFadden, Ph.D. (Public Policy)

University Professor: Richard A. Easterlin, Ph.D.*

Professors: Dominic James Brewer, Ph.D. (Education); Juan Carrillo, Ph.D.; Robert Dekle, Ph.D.; Gillian Hadfield, Ph.D., J.D. (Law); Cheng Hsiao, Ph.D.; Ayse Imrohoroglu, Ph.D. (Business); Selahattin Imrohoroglu, Ph.D. (Business); Arie Kapteyn, Ph.D.; Michael J. P. Magill, Ph.D.; John Matsusaka, Ph.D. (Business); Edward J. McCaffery, J.D. (Law); Hyungsik Roger Moon, Ph.D.; Kevin Murphy, Ph.D. (Business); Jeffrey B. Nugent, Ph.D.*; Vincenzo Quadrini, Ph.D. (Business); Geert Ridder, Ph.D.; John Strauss, Ph.D.; Guofu Tan, Ph.D.; Simon J. Wilkie, Ph.D.; Donald E. Yett, Ph.D.; Fernando Zapatero, Ph.D. (Business)

Associate Professors: Caroline Betts, Ph.D.; Isabelle Brocas, Ph.D.; Harrison Hsueh-Cheng Cheng, Ph.D.; Michael E. DePrano, Ph.D.

Assistant Professors: Giorgio Coricelli, Ph.D.; Joel David, Ph.D.; Yu-Wei Hsieh, Ph.D.; Yilmaz Kocer, Ph.D.; Anant Nyshadham, Ph.D.; Guillaume Vandenbroucke, Ph.D.; Nina Walton, Ph.D. (Law)

Professor of the Practice of International Relations and Economics: Lord John Eatwell, Ph.D.

Senior Lecturer: Nake Kamrany, Ph.D.*

Emeritus Professor: Richard H. Day, Ph.D.

*Recipient of university-wide or college teaching award.

Undergraduate Programs

The economics curriculum is oriented toward a general, liberal education. The study of economics requires adequate preparation in mathematics and statistics. The department offers a B.A. degree in economics, a B.A. degree in political economy, a B.A. degree in social sciences, a B.S. in economics/mathematics and a minor in economics. The B.A. degrees require a total of 32 upper-division units for the major.

Graduate Programs

The department offers a Master of Arts in Economics, a Master of Arts in Economic Developmental Programming, a Master of Science in Mathematical Finance, dual degrees with the USC Gould School of Law and the USC Price School of Public Policy, a Doctor of Philosophy in Economics, and a Doctor of Philosophy in Pharmaceutical Economics and Policy with the USC School of Pharmacy.

Undergraduate Degrees

Advisement

Upon declaring a major or minor in economics, students should consult with the department's undergraduate adviser. Students can check their academic progress on the USCweb under OASIS.

Major Requirements for the Bachelor of Arts in Economics

Students are required to take ECON 203, ECON 205, ECON 303, ECON 305, ECON 317, ECON 414 and four economics elective courses. Of the four elective courses (300 level or above) a minimum of two must be economics courses at the 400 level or higher. The remaining two economics courses must be approved by the department's director of undergraduate studies. A grade of C (2.0) or better is required for each of

the core courses ECON 303, ECON 305, ECON 317 and ECON 414. MATH 118x or MATH 125 is required for the major; students are advised to meet the requirement by their sophomore year. Majors are also required to take at least one two-unit course on computing chosen from ITP 101x, ITP 110x or CSCI 101L.

Major Requirements for the Bachelor of Arts in Political Economy

The Bachelor of Arts in Political Economy explores the intersection of economics with politics in domestic and international contexts. It prepares students for engagement with global and regional questions that require analysis of economic and political causes and consequences and provides a useful background for a wide variety of entry positions in the public and private sectors.

LOWER-DIVISION COURSES (16 UNITS) UNITS

Complete two ECON and one MATH course (12 units):

ECON 203	Principles of Microeconomics	4
ECON 205	Principles of Macroeconomics	4
MATH 118x	Fundamental Principles of the Calculus, or	
MATH 125	Calculus I	4

Choose one (4 units):

IR 210	International Relations: Introductory Analysis	4
POSC 120	Comparative Politics	4
POSC 130	Law, Politics, and Public Policy	4

UPPER-DIVISION REQUIREMENTS (32 UNITS) UNITS

ECON 303	Intermediate Microeconomic Theory	4
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Choose three, at least two from ECON (12 units):

BUAD 350	Macroeconomic Analysis for Business Decisions	4
ECON 305	Intermediate Macroeconomic Theory, or	
ECON 330	The Political Economy of Institutions	4
ECON 332	Contracts, Organizations, and Institutions	4
ECON 340	Economics of Less Developed Countries	4
ECON 360	Public Finance	4
ECON 366	Urban Economics	4
ECON 395	Economic Policy Issues	4
POSC 335	Political Parties, Campaigns, and Elections	4

Choose one (4 units):

FBE 402	Government and Business	4
IR 305	Managing New Global Challenges	4
IR 308	Globalization: Issues and Controversies	4
IR 323	Politics of Global Environment	4
IR 324	Multinational Enterprises and World Politics	4
IR 325	Rich and Poor States in the World Political Economy	4
IR 326	U.S. Foreign Economic Policy	4
IR 330	Politics of the World Economy	4

IR 333	China in International Affairs	4
IR 358	The Asia Pacific in World Affairs	4
IR 360	International Relations of the Pacific Rim	4
IR 362	The International Relations of the Contemporary Middle East	4
IR 364	The Political Economy of Latin American Development	4
IR 371	Global Civil Society: Non-State Actors in World Politics	4
POSC 320	Urban Politics	4
POSC 321	Urban Political Problems	4
POSC 325	State Politics	4
POSC 334	Interest Groups and Elite Behavior	4
POSC 347	Environmental Law	4
POSC 363	Cities and Regions in World Politics	4
POSC 380	Political Theories and Social Reform	4
PPD 357	Government and Business	4

Choose two, at least one from ECON (8 units):

ECON 450	International Trade	4
ECON 487	Resource and Environmental Economics	4
IR 430	The Politics of International Trade	4
POSC 425	Legislative Process	4
POSC 437	Mass Media and Politics	4

Choose one (4 units):

IR 430	The Politics of International Trade	4
IR 439	Political Economy of Russia and Eurasia	4
IR 454	The International Political Economy of Development	4
POSC 430	Political Economy of Mexico	4
POSC 451	Politics of Resources and Development	4
POSC 453	Political Change in Asia	4
POSC 456	Women in International Development	4
POSC 463	European Politics	4

Total: 48 units required for the major

Requirements for the Bachelor of Arts, Social Sciences, with an Emphasis in Economics

Students are required to take ECON 203, ECON 205, ECON 303, ECON 305 and three economics elective courses numbered 300 or 400. A grade of C (2.0) or better is required for each of the core courses ECON 303 and ECON 305. MATH 118x or MATH 125 is required and an additional 12 units of upper-division courses from departments in the social sciences (anthropology, geography, international relations, history, political science, psychology, sociology).

Progressive Degree Program in Economics

The Economics department offers students who have demonstrated exceptional academic success the opportunity to earn both bachelor's and master's degrees

in a progressive degree program. This program allows students to earn both the Bachelor of Arts and the Master of Arts degrees in five years. Students may also pursue the Bachelor of Science in Economics/Mathematics and the Master of Science in Mathematical Finance. Further details about progressive degree programs can be found on page 87xx.

Admission

Admission is available after the completion of 64 units of course work toward the undergraduate degree. Students must apply for admission to the progressive degree program after completing 64 units of applicable course work to their undergraduate program, but prior to the completion of 96 units of course work. The application for admission to the progressive degree program must be accompanied by a course proposal plan and two letters of recommendation from USC Economics faculty.

Awarding of Degrees

The bachelor's and master's degrees may be awarded separately upon completion of all degree requirements, but the master's degree will not be awarded before the bachelor's degree. Students who elect not to complete the master's must complete 128 units to earn the bachelor's degree.

Requirements for the Bachelor of Science in Economics/Mathematics

Students are required to take seven courses in economics, seven courses in mathematics and one course in computer programming languages. Pre-major requirement: MATH 125 or equivalent.

In Economics: ECON 203, ECON 205, ECON 303, ECON 305, ECON 414 and at least two other ECON courses at the 400 level or above

In Mathematics: MATH 126 or MATH 127; MATH 225 or MATH 245; MATH 226 or MATH 227; MATH 407, MATH 408 and at least two other MATH courses at the 400 level or above

In Computing: At least one course chosen from ITP 110x, ITP 150x, ITP 165x; CSCI 101L

Electives must be approved by the program advisers.

Minor in Economics

Students from all disciplines will benefit from an economics minor. The economics minor is offered in three tracks. Each track is designed to help the student explore a coherent area of economic thought and methodology. Students minoring in economics must maintain at least a 2.0 GPA (cumulative) in courses taken for the minor.

The minor includes the core courses ECON 203, ECON 205, ECON 303 or ECON 305, MATH 118x or MATH 125 plus three courses chosen from one of the following tracks:

Law and Political Economy

This track introduces students to the economic theory that underlies the economic choices made by individuals and the ways in which law and policy combine to

regulate such behavior. Economic models of individual choice, contracts, and law are analyzed in courses in this track. Choose three courses from: ECON 317, ECON 330, ECON 332, ECON 434.

Finance and Money

This track guides students through the economic thought and theory that underlie the importance of money. Courses cover topics that shed light on the ways in which institutions, individual preferences and financial markets affect the allocation and investment of money. Choose three courses from: ECON 317, ECON 350, ECON 357, ECON 360, ECON 450, ECON 452, ECON 457.

International Economics

This track concentrates on the foundations, complexities and importance of the global economy as well as the role of economics and political economy in societies outside of the United States. Choose three courses from: ECON 317, ECON 330, ECON 340, ECON 342, ECON 343, ECON 346, ECON 450.

Undergraduate Honors Program

The department offers an honors program. First and second semester seniors can enroll in ECON 495 Honors Thesis. Honors will be awarded upon completion of the thesis, an overall GPA of 3.0 or higher and a major GPA of 3.5.

Department Policy Regarding Transfer Credits

Students who have taken courses equivalent to ECON 303, ECON 305, ECON 317 or ECON 414 from an economics department at another four-year college or from a program deemed comparable by the director of undergraduate studies, can earn transfer credits provided they received a B (3.0) or better in the courses.

Graduate Degrees

The graduate program in economics is designed to prepare students for careers in teaching, research, industry and government. The department emphasizes economic theory and econometrics; applied economic analysis, including microeconomics, macroeconomics, international and development economics, urban and regional economics; and political economy.

Admission Requirements

Prerequisites

The typical applicant for admission will normally have completed an undergraduate major in economics. Minimal prerequisites for admission to a master's degree program include courses in intermediate microeconomic and macroeconomic theory, a year of calculus, and a semester of statistics. Applicants for the Ph.D. program are normally expected to have completed more than the minimum, particularly in the areas of mathematics and statistics.

Criteria

The Graduate Record Examinations General Test, three letters of recommendation and the student's statement of purpose are required. The letters and statement should be sent directly to the Director of Graduate Admissions, Department of Economics, KAP

300, University of Southern California, Los Angeles, CA 90089-0253. International applicants are required to take the TOEFL or IELTS examination. In addition, applicants for financial aid are advised to take the GRE Economics Subject Test and international students must have a TSE score of 200. Admission is based on the appropriateness and quality of completed course work, GRE scores and the letters of recommendation.

Procedure

Application deadlines for master's degrees are normally April 15 for the fall semester and November 1 for the spring. Completed doctoral fellowship and assistantship applications are due by December 1. Except for unusual cases, students are permitted to begin Ph.D. programs only during the fall semester.

Placement Examinations

Prior to registration, all entering graduate students are required to take the Economics Department placement examinations in general economic theory and the basic principles of algebra, calculus and statistics. Depending on the outcome of these examinations, deficiency course work yielding no credit toward graduate degrees may be required. Students whose native language is other than English will be required to take an English placement examination. Course work in English may be required.

Degree Requirements

These degrees are under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue (page 97xx) for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School.

Foreign Language/Research Tool Requirements

There is no foreign language requirement. However, competence in the use of one computer programming language is required for all graduate degrees offered through the Department of Economics, except the Ph.D. in Political Economy and Public Policy. Such competence can be demonstrated either by course work or examination. Students in master's programs must meet this requirement before starting the thesis or taking the comprehensive examination; students in the Ph.D. program must complete it before taking the qualifying examination.

Master of Arts in Economics

Thesis Option Requirements

At least 24 units (usually six courses; at least four must be in economics at the graduate level) and completion of an acceptable thesis accompanied by registration in ECON 594ab is required. Requirements include the following courses in economics:

REQUIRED COURSES		UNITS
ECON 500	Microeconomic Analysis and Policy, or	
ECON 503	Microeconomic Theory I	4
ECON 501	Macroeconomic Analysis and Policy, or	
ECON 505	Macroeconomic Theory I	4

ECON 511	Econometric Methods, or	
ECON 513	Practice of Econometrics	4
ECON 594ab	Master's Thesis	2-2

Comprehensive Examination Option Requirements

At least 32 units (usually eight courses; at least six must be in economics at the graduate level), and satisfactory performance on a comprehensive examination in economic theory is required.

REQUIRED COURSES		UNITS
ECON 500	Microeconomic Analysis and Policy, or	
ECON 503	Microeconomic Theory I	4
ECON 501	Macroeconomic Analysis and Policy, or	
ECON 505	Macroeconomic Theory I	4
ECON 511	Econometric Methods, or	
ECON 513	Practice of Econometrics	4

Not more than 4 units may be ECON 590; 590 units cannot be counted as part of the required minimum of graduate level courses specified above.

Master of Arts in Economic Developmental Programming

This degree program is designed to provide advanced training in the basic tools of development programming and their application to practical problems of developing countries. The program is structured to enable well-prepared students entering in May to finish the following summer. Requirements include the following courses in economics:

REQUIRED COURSES		UNITS
ECON 401	Mathematical Methods in Economics	4
ECON 500	Microeconomic Analysis and Policy, or	
ECON 503	Microeconomic Theory I	4
ECON 501	Macroeconomic Analysis and Policy, or	
ECON 505	Macroeconomic Theory I	4
ECON 502	Mathematical Methods in Dynamic Economics, or	
ECON 607	Topics in Dynamic Optimization, or	
ECON 615	Applied Econometrics	4
ECON 511	Econometric Methods	4
ECON 513	Practice of Econometrics	4
ECON 523	Economic History and Development, or	
ECON 537	Contracts, Organizations, and Institutions, or	
ECON 541	Economic Development, or	
ECON 634	Political Economy of Institutions, or	
ECON 644	Economic Development Programming and Policy Planning	4
ECON 650	International Trade Theory, or	
ECON 651	International Monetary Theory	4
ECON 590	Directed Research, or	
ECON 692	Seminar in Economic Development	2-8

In addition, a total of three courses in one of several designated options in economics, international relations, law, urban planning and development, demography, or business administration is required. In certain cases units can be granted for internship work. The total unit requirements are 32–48, including a comprehensive examination or a thesis.

For a detailed description of the program and its requirements see *Master of Arts in Economic Developmental Programming*, available from the Department of Economics faculty adviser.

Study Abroad Option

Students enrolled in the Master of Arts in Economics and the Master of Arts in Economics Development Program have the opportunity to participate in an academic exchange program with the Paris School of Economics (PSE). This partnership will allow USC graduate students to engage economic issues on a global scale, providing both a dynamic and insightful experience. Students will take classes with European economists and students to broaden the understanding and depth of economics theory. PSE courses will not fulfill core requirements in the program, only elective units.

Students may participate after their first semester. All applicants must have a USC grade point average of at least 3.0 at the time of application. Students who wish to participate in their second semester must meet with the faculty director of graduate studies and be in academically good standing by the middle of their first semester.

Master of Science in Mathematical Finance

The objective of this master of science program is to produce graduates with a rigorous foundation in the economic theory and mathematical modeling of financial markets. The program creates an integrated curriculum spanning four disciplines: economics, mathematics, econometrics/statistics and computational/numerical analysis. The program is designed for recent graduates in the fields of applied mathematics, physics and engineering — or for graduates in economics, business and finance with strong mathematical backgrounds — who wish to pursue high-tech finance careers in financial institutions, industry or government.

Admission Requirements

Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue for general regulations (page 97xx). All applicants must take the GRE General Test. Complete transcripts of undergraduate and any graduate level courses are required, as well as a statement of purpose and three recommendation letters. A substantial undergraduate background in mathematics is required, which should include one semester of real analysis or advanced calculus, one semester of linear algebra and one semester of advanced probability/statistics. Candidates with weaker backgrounds may be required to take mathematics classes prior to admission to the program. An undergraduate knowledge of microeconomics and of macroeconomics, and partial differential equations is helpful, although it is not required for admission. Some experience in Matlab and C/C++ programming is also useful.

Foreign Language Requirement

There is no foreign language requirement.

Course Requirements

Thirty units of course work are required, six core courses and four to five elective courses. Students are required to satisfy a summative experience for degree completion. This will be in the form of registration in 1 unit of MATH 590 Directed Research with a summative report at the end of the term. Topics of research will be determined by the program director. The program consists of:

REQUIRED CORE COURSES (6 COURSES, 18 UNITS)

		UNITS
Mathematics and Mathematical Finance:		
MATH 530ab	Stochastic Calculus and Mathematical Finance	3-3
MATH 512	Financial Informatics and Simulation (Computer Labs and Practitioner Seminar)	3
MATH 590	Directed Research	1

Financial Economics and Econometrics:		
ECON 613	Economic and Financial Time Series	4
ECON 659	Economics of Financial Markets I	4

ELECTIVE COURSES (4 COURSES, 12 UNITS)

Computational and Empirical Finance (must take at least 2 courses)*:		
FBE 535	Applied Finance in Fixed Income Securities	3
FBE 554	Trading and Exchanges	3
FBE 555	Investment Analysis and Portfolio Management	3
FBE 559	Management of Financial Risk	3
FBE 589	Mortgages and Mortgage-Backed Securities and Markets	3
(FBE 555 highly recommended)		
Statistics*:		
MATH 541ab	Introduction to Mathematical Statistics	3-3
MATH 543L	Nonparametric Statistics	3
MATH 547	Methods of Statistical Inference	3
Numerical/Optimization/Other Methods*:		
MATH 501	Numerical Analysis and Computation	3
MATH 502ab	Numerical Analysis	3-3
MATH 504ab	Numerical Solution of Ordinary and Partial Differential Equations	3-3
MATH 505ab	Applied Probability	3-3
MATH 508	Filtering Theory	3
MATH 509	Stochastic Differential Equations	3
MATH 585	Mathematical Theory of Optimal Control	3

Computational and Financial Economics:

ECON 614	Economic and Financial Time Series II	4
ECON 652	Economics of Financial Markets II	4
PM 511ab	Data Analysis	4-4

Prerequisites for any of the above courses can be waived based on students' knowledge of the subject area. Approval from the program director is required.

**The elective courses in statistics/numerical/optimization/other methods and computational and empirical finance have to be approved for each student by the program directors. Other electives, not on this list, may sometimes be approved after consultation with program directors.*

Juris Doctor/Master of Arts in Economics

Students are required to complete 92 units of law and economics course work, four units of which must constitute a thesis acceptable to the faculties of the USC Gould School of Law and the Department of Economics. Before enrolling in economics courses, students must have completed an undergraduate course in probability and statistical inference (e.g., BUAD 310). Students with undergraduate degrees in such disciplines as business, economics, mathematics and psychology will usually have taken such a course as part of their undergraduate program.

First Year: Required law school courses.

SECOND AND THIRD YEARS:

		UNITS
ECON 500	Microeconomic Analysis and Policy	4
ECON 511	Econometric Methods, or	
ECON 513	Practice of Econometrics	4

Two Additional Graduate-level Courses in Economics (Eight Units): ECON 680 Industrial Organization and ECON 681 Economics of Regulated Industries are recommended, but the student is free to choose any graduate level courses other than ECON 590 or ECON 790 in consultation with the program adviser. ECON 401 Mathematical Models in Economics may be substituted for one of these courses, and ECON 417 Statistics for Economics or ECON 414 Introduction to Econometrics may be substituted for the other. (These three courses are applicable toward graduate credit.)

Four Units of Thesis: The thesis must be acceptable to both the faculty of the law school and the faculty of the Department of Economics.

Thirty-nine Units of Law Courses: including one course in a subject matter related to economics (including but not necessarily limited to Taxation, International Business Transactions, Natural Resources Law, Antitrust Law I, Antitrust Law II, Regulated Industries, Labor Law, Administrative Process, Taxation of Corporations or Land Use Seminar and Land Finance Seminar). In addition to the LSAT, students interested in this dual degree program are required to take the aptitude and advanced economic portions of the Graduate Record Examinations (GRE).

Dual Master of Arts in Economics and Master of Planning

The USC Price School of Public Policy and the Department of Economics jointly offer a two-year program leading to the MPI and M.A. degrees. Applicants must apply to the Price School of Public Policy and the Graduate School and meet the admission requirements of both.

Requirements

Requirements for completion of the dual degree program are 58 units, including 24 units in economics and 34 units in planning. For a complete listing, see Public Policy, page 894xx.

Doctor of Philosophy in Economics

Application deadline: December 1

The Ph.D. in Economics requires 60 units of graduate level courses numbered 500 or higher (excluding ECON 500, ECON 501, ECON 590, ECON 690, ECON 691, ECON 692, ECON 693, ECON 694, ECON 790 and ECON 794).

REQUIRED COURSES		UNITS
The following courses must be taken within the first 36 units of graduate level courses:		
ECON 503	Microeconomic Theory I	4
ECON 505	Macroeconomic Theory I	4
ECON 511	Econometric Methods	4
ECON 514	Probability and Statistics for Economists	4
ECON 603	Microeconomic Theory II	4
ECON 605	Macroeconomic Theory II	4
ADDITIONAL REQUIRED UNITS		UNITS
A minimum of 6 units selected from the following:		
ECON 690	Seminar in Economic Theory	2-8
ECON 691	Seminar in Econometrics	2-8
ECON 692	Seminar in Economic Development	2-8
ECON 693	Seminar in Applied Economics and Public Policy	2-8
ECON 694	Seminar in Dynamic Economics	2-8
A minimum of 4 units of:		
ECON 794abcdz	Doctoral Dissertation	2-12

Students must take a core theory examination immediately after the completion of ECON 503, ECON 505, ECON 603 and ECON 605 in order to continue in the Ph.D. program. There is also a breadth requirement, which may be satisfied by taking either ECON 523 Economic History and Development or ECON 527 Classical Economic Theory and Its Critics or ECON 538 Values and Social Analysis.

After passing the core theory examination, the student should consult the director of graduate studies on the appointment of a Ph.D. qualifying exam committee. The student should complete two advanced fields of study with the approval of the qualifying exam committee and the director of graduate studies. The requirements for completing each advanced field of study consist of (1) at least two courses numbered 600

or higher in that field with a minimum grade of A- in each, (2) satisfactory completion of one of the seminars related to the field and (3) presentation of a research paper in a class or seminar. In addition, the student should complete a minor field, which consists of a course numbered 600 or higher with a minimum grade of B. The signing of the student's Permission to Take the Qualifying Examination form will signify the satisfactory completion of the field requirements.

The remainder of the courses to total 60 units must be preapproved by the qualifying exam committee. However, not more than four units of ECON 590 and/or 790 can be taken in each semester. Courses taken outside the department or USC cannot count toward the completion of a field and are not allowed before at least one advanced field is completed. Waivers to the course requirements based on equivalent work at another university may be made upon petition to the director of graduate studies up to a maximum of 12 units. Waivers for any other reason require the approval of the department graduate committee.

Grade Point Average Requirements

In addition to the Graduate School requirements, a minimum GPA of 3.0 on all course work taken toward the 60 units requirement must be achieved. ECON 615 or a higher level course in econometrics must be completed with a grade of B or better.

Screening Procedure

Students desiring the Ph.D. must undergo a screening procedure before completing more than 24 units of graduate level courses. The process involves a review of the student's course grades, performance on the core theory examination, and demonstrated research ability. Students who pass the screening procedure are permitted to continue studies toward the Ph.D. degree.

Core Theory Examination

Before beginning the third semester of graduate study, the student must pass a written examination in general economic theory including applications. A maximum of two attempts is allowed. Not taking the examination at a given due time is considered as failing the examination once. The core theory examination is offered twice every year during the summer session. Any exceptions are subject to approval of the director of graduate studies.

Empirical Research Paper

During the summer after the fourth semester of study, the student must submit an empirical paper using quantitative methods to the examination committee. The paper may use field, experimental or simulated data. In this paper, the student should demonstrate competence in using a computer programming language and software.

Research Paper

During the summer after the sixth semester of study, the student must submit a research paper to a committee of faculty. The paper must be of publishable quality.

Seminar Requirements

Every student is required to take and satisfactorily complete three, two-unit research seminars chosen from ECON 690, ECON 691, ECON 692, ECON 693 and ECON 694. The same seminar may be taken more than once. Before completing the dissertation, the student must present at least one original research paper in a seminar of the student's choice.

Dissertation Proposal Preparation

The student is required to write a research proposal on a topic suitable for a dissertation. Normally, the chair of the student's qualifying exam committee directs this work. The written proposal is presented and critiqued during the qualifying examination.

Qualifying Examination

Upon successful completion of course and grade requirements, the paper requirement, and the core theory examination, the student takes an examination, which focuses on the presentation and defense of the written dissertation proposal. After passing this examination, the student is admitted to candidacy for the Ph.D. degree. This examination must be taken not later than the end of the seventh semester of study.

Doctoral Dissertation

After admission to candidacy, the student forms a dissertation committee composed of three faculty members, one of whom must be from an outside department. The chair of this committee is the dissertation supervisor. The student must register in sequence for ECON 794abcdz Doctoral Dissertation each semester, excluding summer sessions, until the dissertation and all other degree requirements are completed.

The dissertation is defended in an oral examination administered by the dissertation committee when the committee agrees that the student has completed the research and a satisfactory draft of the dissertation has been written. If the committee agrees to pass the student, all suggested extensions, modifications, and corrections are incorporated into a final draft, which must be approved by all members of the committee.

It is the student's responsibility to see that the proper paperwork is submitted to the Graduate School upon completion of each requirement for the Ph.D. degree.

Doctor of Philosophy in Pharmaceutical Economics and Policy

Application deadline: December 1

The Department of Economics and the Department of Pharmaceutical Economics and Policy (USC School of Pharmacy) jointly offer a program of study leading to the Ph.D. degree and to the M.A. degree in the process of work toward the Ph.D. degree.

Required courses include both core requirements and area requirements. Core requirements include courses in economic theory, econometrics, and research methods. Area requirements include courses in health economics, pharmaceutical economics, welfare theory and applied econometrics.

For a detailed description of this program, see the School of Pharmacy section of this catalogue, page 855xx.

Courses of Instruction

ECONOMICS (ECON)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

ECON 203 Principles of Microeconomics (4, FaSp)

Behavior of firms and consumers, functions of the price system, competition and monopoly, labor markets, poverty, government regulation, international trade, and the environment.

ECON 205 Principles of Macroeconomics (4, FaSp)

Unemployment, inflation and output determination and links. Effects of government taxation and spending on growth, investment, saving, consumption, and trade.

ECON 238xg Political Economy and Social Issues (4, Fa)

Contending politico-economic perspectives in modern Western thought: conservatism, liberalism, radicalism, and their relevance for contemporary policy issues including government and markets, class, race, gender, poverty and inequality. Not available for major credit to economics majors. *Concurrent enrollment*: WRIT 140.

ECON 303 Intermediate Microeconomic Theory (4, FaSp)

Decision-making by business firms, consumer preferences and behavior, uncertainty, competition, monopoly, labor and resource markets, efficient resource allocation, externalities, and government policy. *Prerequisite*: ECON 203; MATH 118x or MATH 125; *corequisite*: ECON 205.

ECON 305 Intermediate Macroeconomic Theory (4, FaSp)

The determinants of aggregate income, employment, and inflation; economic fluctuations; fiscal and monetary policy; financial markets; the national debt. *Prerequisite*: ECON 203 and ECON 205; MATH 118x or MATH 125.

ECON 317 Introduction to Statistics for Economists (4, FaSp)

Introduction to statistical methods appropriate for analyzing economic data: probability theory, random variables and probability distributions, sampling, estimation, statistical inference. *Prerequisite*: MATH 118x or MATH 125.

ECON 322 Economic History and Modernization of the Middle East (4, Irregular)

Economic history of the Middle East from the rise of Islam to the modern era. Roles of law, religion. Processes of institutional transformation, stagnation, modernization. *Prerequisite*: ECON 203.

ECON 330 The Political Economy of Institutions (4)

Social functions served by the rules, laws, regulations, and customs that constrain human activity. Processes whereby such institutions adapt, or fail to adapt, to changing circumstances. *Prerequisite*: ECON 203.

ECON 332 Contracts, Organizations and Institutions (4)

Contract law and economic organization, determinants of firm boundaries, transaction cost economics, agency theory, incomplete contracting, business strategy, bureaucracy, institutional environment, politics and property rights. *Prerequisite*: ECON 203.

ECON 338 Political Economy and Social Issues (4, Sp)

Contending politico-economic perspectives in modern Western thought and culture; absolutist, liberal, democratic, Marxist, anarchist, and other traditions, topics and issues. (Duplicates credit in former ECON 121x.) *Prerequisite*: ECON 205.

ECON 340 Economics of Less Developed Countries (4)

Causes of economic underdevelopment: historical, institutional, structural, ideological, technological, cultural. Patterns and theories of development. Role of government, international trade, and education in economic growth. *Prerequisite*: ECON 203 or ECON 205.

ECON 342 Economic Development of the Middle East (4, FaSp)

Contemporary economic problems of the Middle East: comparative and historical perspectives on issues of institutions, investment, oil, trade, migration, finance, inequality, labor and capital markets. *Prerequisite*: ECON 203; *recommended preparation*: ECON 205 and ECON 303.

ECON 343 Economic Development of East Asia (4)

Contemporary economic problems of East Asian countries: management, labor, technology, trade, investment. Determinants of their high growth rates in the late 20th century. *Prerequisite*: ECON 203 or ECON 205.

ECON 344 Economic Development of Sub-Saharan Africa (4, FaSpSm)

Contemporary economic problems of sub-Saharan African economies: policies and endowments. Focus on issues of poverty, agriculture, health, macroeconomy and political economy. *Prerequisite*: ECON 203 or ECON 205.

ECON 346 Economics of Transition and Development: China (4, FaSpSm)

A focus on the Chinese economy, its reform and transition to a market economy, its relation with East Asian countries and integration into the world economy. *Prerequisite*: ECON 203 or ECON 205.

ECON 348 Current Problems of the American Economy (4, Fa)

A comprehensive investigation of problems stemming from changing composition of the work force, urban decline, new technologies, inequalities, ethnic relations, government deficits. Prospects for continued growth. *Prerequisite*: ECON 203 or ECON 205.

ECON 350 The World Economy (4, SpSm)

International cooperation and conflict in the world economy. Global economic problems of growth and development, trade and finance, migration, economic stability, and the environment. *Prerequisite*: ECON 203 or ECON 205.

ECON 351x Microeconomics for Business (4, FaSpSm)

Development and business applications of: theory of the firm; theory of the consumer; intertemporal decisions; decisions under risk; market failures; industrial and enterprise structure. Not for major credit for: economics, economics/mathematics, social sciences (economics) majors. (Duplicates credit in former ECON 251x.) *Prerequisite*: MATH 118.

ECON 352x Macroeconomics for Business (4, FaSpSm)

Theoretical development and significance to business and markets of economic growth; inflation; unemployment; monetary and fiscal policy; business cycles; savings and investment; exchange rates. Not for major credit for: economics, economics/mathematics, social sciences (economics) majors. (Duplicates credit in former ECON 252x.) *Prerequisite*: MATH 118; *recommended preparation*: introductory economics course, high school math, and algebra.

ECON 357 Money, Credit, and Banking (4)

The money, bond, stock, and other financial markets; portfolio choice; determinants of asset prices and interest rates; inflation; interactions between financial markets and government policies. *Prerequisite*: ECON 203 and ECON 205.

ECON 360 Public Finance (4)

Role of the government; income and corporate taxation; direct versus indirect taxation; optimal tax structure; public goods; public sector pricing; public debt and macroeconomic stability. *Prerequisite*: ECON 203 and ECON 205.

ECON 366 Urban Economics (4)

Urban trends and problems, including changing urban form and function, urban public finance, housing, renewal, poverty, race, transportation, and the environment. *Prerequisite*: ECON 203 and ECON 205.

ECON 390 Special Problems (1-4)

Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

ECON 395 Economic Policy Issues (4)

Selected policy dilemmas, including welfare reform, urban renewal, government budget deficits, regulation and deregulation, environmental problems, immigration, and global development. Lectures by leading authorities and weekly discussion sessions. *Prerequisite*: ECON 203 and ECON 205.

ECON 401 Mathematical Methods in Economics (4, Fa)

Introduction to quantitative methods for analyzing economic equilibria; comparative statics and dynamics. Utility theory, consumer behavior, and profit maximization. Model formulation in micro and macroeconomics. *Prerequisite*: ECON 303.

ECON 404 Games and Economics (4)

Analysis of strategic economic interactions. Topics include bargaining, insurance, patents, voting, environmental depletion, strategic trade, learning, reputation, strikes, corporate takeovers, and the provision of public goods. *Prerequisite*: ECON 303.

ECON 414 Introduction to Econometrics (4, FaSp)

Application of statistical methods to economic data: estimating economic relationships using regression analysis, testing hypotheses involving economic behavior, forecasting economic variables. *Prerequisite:* ECON 317.

ECON 415 Behavioral Economics (4) Examination of the traditional and behavioral theories of decision-making and the state of the art in the field. *Prerequisite:* ECON 303.

ECON 419 Advanced Econometrics (4, FaSpSm)

Analysis of binary dependent variable models, panel data analysis, program evaluations, IV analysis, basics of time series and forecasting. *Prerequisite:* ECON 303, ECON 305, ECON 317, ECON 414; MATH 125 or MATH 126 or MATH 225 or MATH 226.

ECON 420 Experimental Economics (4) Examination of economic theories and patterns of behavior useful in building new theories. *Prerequisite:* ECON 303; *recommended preparation:* ECON 317.

ECON 432 Economics of Happiness (4) What is happiness? How does it vary by socio-economic status and over the life cycle? This course will develop insight into the nature and determinants of subjective well-being. *Prerequisite:* ECON 303; *recommended preparation:* ECON 305.

ECON 434 Economic Analysis of Law (4) Common law and property; rationing of justice, resource allocation between prevention and enforcement; division of decision making between public and private sectors. *Prerequisite:* ECON 303.

ECON 450 International Trade (4) Determinants and economic consequences of international trade patterns; effects of trade restrictions and trading blocs; trade negotiations and arrangements. *Prerequisite:* ECON 303.

ECON 451 The Politics of International Trade (4) (Enroll in IR 430)

ECON 452 International Finance (4) Consequences of trade deficits; theories of capital and currency markets, exchange rate regimes, and international monetary coordination. *Prerequisite:* ECON 305.

ECON 457 Financial Markets (4) General equilibrium analysis of economies with financial markets; decision making under uncertainty; methods of risk reduction; portfolio theory and valuation of securities; efficiency of security markets. *Prerequisite:* ECON 303.

ECON 471 Economics of Labor Markets and Human Capital (4) A human capital interpretation of labor demand and supply; wage determination, differentials, and discrimination; job turnover and occupational mobility; unions and collective bargaining. *Prerequisite:* ECON 303.

ECON 472 Economics of Medical Care (4) Health as an investment in human capital; analysis of the demand for and supply of health services and manpower; health insurance; cost-effectiveness analysis; market structures and the pricing of medical services. *Prerequisite:* ECON 303.

ECON 480 Economics of Industrial Organization (4)

Pricing and resource allocation in imperfectly competitive markets; monopoly regulation, collusion, cartels, mergers and antitrust; patents and development incentives; industry case studies. *Prerequisite:* ECON 303.

ECON 487 Resource and Environmental Economics (4)

Management and extraction of renewable and non-renewable natural resources; environmental externalities and regulation of air, water, and land pollution; market incentives versus direct regulation. *Prerequisite:* ECON 303.

ECON 490x Directed Research (1-8, max 12, FaSpSm)

Supervised individual research. Not available for graduate credit.

ECON 495 Honors Thesis (4)

Individual research supervised by a faculty adviser. Successful completion required for departmental honors degree.

ECON 499 Special Topics (2-4, max 8, FaSpSm)

Selected topics in economic theory, history, or policy.

ECON 500 Microeconomic Analysis and Policy (4, Fa)

Theories of the household and the firm; product and factor markets; perfect and imperfect competition; welfare criteria. *Prerequisite:* ECON 303 and ECON 305; *corequisite:* ECON 401.

ECON 501 Macroeconomic Analysis and Policy (4, Sp)

Theories of aggregate economic activity; design and use of macroeconomic models; stabilization and control of inflation, unemployment, and growth. *Prerequisite:* ECON 303, ECON 305, and ECON 401.

ECON 502 Mathematical Methods in Dynamic Economics (4, SpSm)

Movement of economic systems over time; differential and difference equations; introduction to the optimal control of economic processes; dynamic programming and optimal strategies; selected applications. *Prerequisite:* ECON 401.

ECON 503 Microeconomic Theory I (4, Fa)

Optimization of the consumer and the firm; duality and imputed value; perfect and imperfect competition in product and factor markets. *Prerequisite:* ECON 401; *recommended preparation:* ECON 500.

ECON 505 Macroeconomic Theory I (4, Fa)

Aggregate demand, supply and government policy; theories of economic growth and business cycles; static and dynamic implications of government policies. *Prerequisite:* ECON 401; *recommended preparation:* ECON 501, ECON 502.

ECON 511 Econometric Methods (4, Sp) Review of statistical methods of estimation and inference, linear regression with multicollinearity and serial correlation; multivariate regression and simultaneous equations.

ECON 513 Practice of Econometrics (4)

Application of econometric tools using standard econometric software packages for microcomputers; empirical applications to selected economic problems of estimation and inference. *Prerequisite:* ECON 401.

ECON 514 Probability and Statistics for Economists (4, Fa)

Introduction to probability theory and statistical inference to prepare students for graduate courses in econometrics and economic theory; probability, random variables, distributions, estimation, testing, asymptotics. *Prerequisite:* MATH 226.

ECON 523 Economic History and Development (4)

Historical trends in developed and developing societies in various aspects of modernization such as human resources, capital, technology, resource allocation, income distribution, international relations. *Prerequisite:* ECON 303.

ECON 527 Classical Economic Theory and Its Critics (4)

Classical economic theory; its precursors, main contributors, extensions, and critics; focus upon the writings and ideas of Smith, Say, Malthus, Ricardo, Mill, and Marx. *Prerequisite:* ECON 303 and ECON 305.

ECON 537 Contracts, Organizations, and Institutions (4)

Information, property rights, bargaining, transaction costs, incentives, free-riding and contracting in organizations; the nature of cooperation; bureaucracies. *Prerequisite:* ECON 303.

ECON 538 Values and Social Analysis (4)

Factors that make values an essential feature of human society; how values develop, change, and are abandoned; role of values in economic development. *Prerequisite:* ECON 303.

ECON 539 Political Economy (4) (Enroll in PEPP 539)

ECON 541 Economic Development (4) Development, underdevelopment and the problems thereof; agriculture, industry, trade, population, human capital, capital formation; structural, technological, environmental and institutional changes; political economy of the state. *Prerequisite:* ECON 303 and ECON 305.

ECON 580 Antitrust Economics and Competition Policy (4, FaSp)

Efficiency, market failure, government regulation, some basics for antitrust economics, competition policy analysis and collusion and agreements among competitors. *Prerequisite:* ECON 500 or ECON 513.

ECON 590 Directed Research (1-12, FaSpSm)

Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

ECON 593 Practicum in Teaching the Liberal Arts (2, FaSp) (Enroll in MDA 593)

ECON 594abz Master's Thesis (2-2-0, FaSpSm)
Credit on acceptance of thesis. Graded IP/CR/NC.

ECON 599 Special Topics (2-4, max 8, FaSpSm)
Selected topics in economics as developed by the instructor.

ECON 600 Economics of Choice (4) Reviews the normative and positive theories of choice drawing upon recent theoretical and empirical work in cognitive and evolutionary psychology, artificial intelligence, linguistics and economics. *Prerequisite:* ECON 500.

ECON 603 Microeconomic Theory II (4, Sp) General equilibrium theory; existence, uniqueness, and stability; welfare economics; social choice; dynamic models and uncertainty; special topics. *Prerequisite:* ECON 503.

ECON 604 Game Theory (4) Strategies and equilibrium concepts; dynamic and repeated games; incomplete information and learning in games. *Prerequisite:* ECON 500 or ECON 503.

ECON 605 Macroeconomic Theory II (4, Sp) Macroeconomic theory based on the concepts of optimal growth and intertemporal equilibrium; overlapping generations models; recent developments in macroeconomic theory. *Prerequisite:* ECON 503 and ECON 505.

ECON 606 Behavioral Theories of Decision-Making (4) Examination of behavioral theories used to describe and predict choices made in both an individual decision-making setting and strategic environments. *Prerequisite:* ECON 503.

ECON 607 Topics in Dynamic Optimization (4) Theory and numerical methods for dynamic optimization and control; selected applications in economic analysis and econometrics. *Prerequisite:* ECON 502 and knowledge of FORTRAN.

ECON 608 Advanced Neuroeconomics (4) Advanced methodology of neuroeconomics including neural activity, memory, value and reward systems, emotions, and risk. *Prerequisite:* ECON 503.

ECON 610 Quantitative Analysis in Macroeconomics (4, Sp) Dynamic economics, applied general equilibrium models, computational and calibration tools, discrete-state dynamic programming, log-linearization of Euler equations. *Prerequisite:* ECON 505, ECON 605.

ECON 612 Econometric Theory (4) Inference and prediction, generalized and restricted least square, specification analysis, multivariate and seemingly unrelated regressions, simultaneous equations techniques, dynamic models, instrumental variable estimation. *Prerequisite:* ECON 511.

ECON 613 Economic and Financial Time Series I (4, Fa) Simultaneous equation models, dynamic structural econometric models, vector autoregressions, causality, forecasting, univariate and multivariate nonstationary time series, tests for unit roots, cointegration, autoregressive conditional heteroscedasticity models, time series models with changes in regime. *Prerequisite:* ECON 511.

ECON 614 Economic and Financial Time Series II (4, Sp) Stock returns, predictability and volatility, random walk and variance-bounds tests, estimation of capital asset, multifactor, and derivative pricing models, term structure of interest rates. *Prerequisite:* ECON 511.

ECON 615 Applied Econometrics (4, Fa) Use of quantitative models to describe and forecast economic activity; estimation and application of such models to selected policy problems. *Prerequisite:* ECON 511.

ECON 616 Experimental Economics (4) Laboratory methods for testing economic theory; experimental comparison of alternative market and non-market institutions; identification of behavioral responses to alternative regulations. *Prerequisite:* ECON 500 or ECON 503.

ECON 620aBL Experimental Methods (2-2) a: Experimental methods of and design of computer-based experiments. Use of standard software for data collection in individual decision-making experiments and games. **b:** Experimental methods relying on non-choice data. Design methods of experiments that record information in decision-making and physiological data of emotions. *Prerequisite:* ECON 503; *recommended preparation:* ECON 616. Graded CR/NC.

ECON 633 Law and Economics (4, Sp) (Enroll in LAW 633)

ECON 634 Political Economy of Institutions (4) The functions of laws, rules, customs, conventions, and other restrictions on economic and social activity. Theories of institutional evolution. (Duplicates credit in former ECON 534.) *Prerequisite:* ECON 500 or ECON 503.

ECON 639 Contemporary Economic Policy: Theory and Practice (4) History and analysis of the fundamental continuing policy issues: recession, inflation, public debt, regulation, international competition, energy resources and environmental issues, welfare and income distribution. *Prerequisite:* ECON 500 and ECON 501.

ECON 641 Empirical Analysis of Economic Development (4, FaSp) Theory and empirics of the sources of and barriers to economic development and the micro underpinnings of macroeconomic dynamics of growth, inequality, and productivity. *Prerequisite:* ECON 503, ECON 511.

ECON 642 Poverty, Human Resources and Economic Development (4, FaSpSm) Household production models and intra-household models of behavior and their empirical implementation, focus on poverty, human resource investments and their interaction with public policies. *Prerequisite:* ECON 501, ECON 511.

ECON 644 Economic Development Programming and Policy Planning (4) Model construction and application to policy and planning: open economy macroeconomics, trade and investment, institutions, technology, income inequality, environment, policy reforms, political economy. *Prerequisite:* ECON 501 or ECON 505; ECON 500 or ECON 503.

ECON 645 Economic Growth (4, Fa) Surveys theoretical and empirical developments in growth macroeconomics. To equip students to undertake frontier research and policy work to reduce global income inequality. Graduate standing. *Prerequisite:* ECON 505.

ECON 650 International Trade Theory (4) General equilibrium theory applied to theory and practice of commercial policy, economic growth, and trade. *Prerequisite:* ECON 500 or ECON 503.

ECON 651 International Monetary Theory (4) Balance of payments concepts and measures; price theory and the foreign exchange market; international monetary systems; adjustment mechanisms; speculation and official intervention. *Prerequisite:* ECON 500 or ECON 503 and ECON 501 or ECON 505.

ECON 652 Economics of Financial Markets II (4, Sp) Financial market equilibrium and partial equilibrium asset pricing in discrete and continuous time; properties of equilibria with and without complete markets; theory of option prices; Black-Scholes pricing formula; term structure of interest rates; hedging strategies and managing market risk using options, futures and swaps; hedging exchange-rates risks. (Duplicates credit in former ECON 700.) *Prerequisite:* ECON 503.

ECON 653 Empirical International Economics (4) Empirical treatment of advanced topics in international finance including the determination of real and nominal exchange rates; stabilization policies in developing currencies and currency crisis models. Econometric methods in analyzing foreign exchange data and in forecasting. *Prerequisite:* ECON 501, ECON 513; *recommended preparation:* ECON 625, ECON 651.

ECON 659 Economics of Financial Markets I (4, Fa) Equilibrium model of finance economy; absence of arbitrage; complete and incomplete markets; asset pricing theory; representative agent pricing. Capital Asset Pricing Model, martingale property of security prices. *Prerequisite:* ECON 503.

ECON 671 Economics of Labor and Human Capital (4) A human capital interpretation of labor demand and supply; wage determination, differentials, and discrimination; job turnover and occupational mobility; unions and collective bargaining. *Prerequisite:* ECON 500 or ECON 503.

ECON 673 Program Evaluation (4) This course first proposes various means of evaluating an economic program. It then applies the tools to specific problems. *Prerequisite:* ECON 500 or ECON 503; ECON 511.

ECON 680 Industrial Organization (4) Decision making, economic behavior and organization in firms; types of competition and market structure; property rights, nonprofit decision making. *Prerequisite:* ECON 500 or ECON 503.

ECON 681 Economics of Regulated Industries (4) Theories and methods of government regulation; effects of regulation on various industries; behavior of regulatory agencies. *Prerequisite:* ECON 500 or ECON 503.

ECON 688 Empirical Industrial Organization (4) Econometric analysis of industrial organization issues including industry regulation and deregulation, collusion and pricing in differentiated oligopolistic markets, entry and exit, auction mechanisms, contractual relationships. *Recommended preparation:* ECON 600, ECON 603, ECON 612, ECON 615, ECON 680. *Prerequisite:* ECON 503 and ECON 603.

ECON 690 Seminar in Economic Theory (2, max 8, FaSp) Current research in economic theory presented by faculty, students and outside scholars. Graded CR/NC.

ECON 691 Seminar in Econometrics (2, max 8, FaSp) Current research in econometrics presented by faculty, students and outside scholars. Graded CR/NC.

ECON 692 Seminar in Economic Development (2, max 8, FaSp) Current research in international, regional, and urban development economics presented by faculty, students and outside scholars. Graded CR/NC.

ECON 693 Seminar in Applied Economics and Public Policy (2, max 8, FaSp) Current research in applied microeconomics, macroeconomics and public policy presented by faculty, students and outside scholars. Graded CR/NC.

ECON 694 Seminar in Dynamic Economics (2, max 8, FaSp) Topics in dynamic economics involving business fluctuations, economic growth and development, micro-economic adjustments and market mechanisms; related quantitative and qualitative methods; empirical research involving economic change. Graded CR/NC.

ECON 695 Internship in Mathematical Finance (4, Sm) Internship for students in the Mathematical Finance master's program. Practical training in real market environments. Real-world first-hand experience in implementing trading strategies. Application of mathematical finance to real financial markets.

ECON 696 Empirical Microeconomics Seminar (2, max 8, FaSp) Presentations on current research in empirical microeconomics by outstanding scholars from leading economics departments and faculty at USC. Open only to economics Ph.D. students.

ECON 715 Advanced Topics in Econometrics (4) Time-series methods; aggregation; structural models and methods such as factor analysis and multiple indicator models; various special topics. *Prerequisite:* ECON 612 and ECON 613.

ECON 790 Research (1-12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

ECON 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC.

English

**Taper Hall of Humanities 404
(213) 740-2808**
Email: english@dornsife.usc.edu
dornsife.usc.edu/engl
Chair: Margaret E. Russett, Ph.D.

Faculty

University Professor and Leo S. Bing Chair in English and American Literature: Leo Braudy, Ph.D.

Distinguished Professor: Percival Everett, A.M.

USC Associates' Chair in Humanities: John Carlos Rowe, Ph.D.

Dean's Professor of English: Bruce R. Smith, Ph.D.

Florence R. Scott Professor of English: Tania Modleski, Ph.D.

Barbra Streisand Professor of Contemporary Gender Studies: Alice Echols, Ph.D.*

Judge Widney Professor of Poetry and Public Culture: Dana Gioia, MBA

Provost Professor of English and Art History: Kate Flint, Ph.D.

Writer in Residence: T. Coraghessan Boyle, Ph.D.

Professors: Aimee Bender, MFA; Joseph A. Boone, Ph.D.; Joseph A. Dane, Ph.D.; Lawrence D. Green, Ph.D.; Peggy Kamuf, Ph.D. (*French and Italian*); Susan

McCabe, Ph.D.; Carol Muske-Dukes, MFA*; David Rollo, Ph.D.*; David Román, Ph.D.*; Margaret Rosenthal, Ph.D. (*French and Italian*); Margaret E. Russett, Ph.D.; Hilary M. Schor, Ph.D.; David St. John, MFA; Daniel Tiffany, Ph.D.; David Treuer, Ph.D.; Marianne Wiggins

Associate Professors: Emily Anderson, Ph.D.*; Judith Jackson Fossett, Ph.D.*; Alice Gambrell, Ph.D.*; Thomas Gustafson, Ph.D.*; William R. Handley, Ph.D.; Mark Irwin, Ph.D.; Heather James, Ph.D.*; Dana Johnson, MFA; Anthony Kemp, Ph.D.; Rebecca Lemon, Ph.D.; Teresa McKenna, Ph.D.; Viet Nguyen, Ph.D.*; Karen L. Tongson, Ph.D.

Assistant Professors: Michelle Gordon, Ph.D.; Devin Griffiths, Ph.D.

Associate Professors (Teaching): Mary (Molly) A. Bendall, M.A.; Richard Berg, Ph.D.; Thea Cervone, Ph.D.; Michael Du Plessis, Ph.D. (*Comparative Literature*); Chris Freeman, Ph.D.; Susan Segal, MFA; Cecilia Woloch, MFA

Leo S. Bing Professor Emeritus: Jay Martin, Ph.D.

Leo S. Bing Professor Emeritus of English and American Literature: Paul K. Alkon, Ph.D.

Florence R. Scott Professor of English Emerita: Marjorie Perloff, Ph.D.

Emeritus Professors: Charles B. Berryman, Ph.D.; Donald C. Freeman, Ph.D.; Max F. Schulz, Ph.D.; Virginia J. Tufte, Ph.D.*

Emeritus Associate Professors: William H. Brown, Ph.D.; David Eggenschwiler, Ph.D.; Stephen C. Moore, Ph.D.

**Recipient of university-wide or college teaching award.*

Undergraduate Degrees

Undergraduate Programs

The Department of English offers a broad range of courses in English, American and Anglophone literature of all periods and genres, and in related areas such as creative and expository writing, literature and visual arts, ethnic literature and cultural studies, history of the English language and of literary criticism, and literary and cultural theory. Instructors assign extensive reading and writing in order to help students become perceptive readers, critical thinkers and strong writers. Class sizes are kept at 19 to enable full discussion in literature classes and at 12 in creative writing workshops.

Advisement

All students meet with a faculty adviser before registering for courses each semester. Faculty advisers help students shape their majors according to their evolving interests and the requirements of the majors. Students should consult the director of undergraduate studies and the undergraduate staff adviser about departmental clearances and course substitutions.

Major Requirements for the Bachelor of Arts in English

Undergraduate majors in English are required to take 40 units (usually 10 courses) for a B.A. in English with

an emphasis in either literature or creative writing. All majors must take three introductory courses, including at least two from the survey sequence:

ENGL 261	English Literature to 1800	4
ENGL 262	English Literature since 1800	4
ENGL 263	American Literature	4

One introductory course may be from the genre sequence:

ENGL 290	Cultural Studies: Theories and Methods	4
ENGL 298	Introduction to the Genre of Fiction	4
ENGL 299	Introduction to the Genre of Poetry	4

Students should take at least two introductory courses before enrolling in upper-division literature courses or creative writing workshops.

Majors emphasizing English literature must take seven upper-division courses, including two courses in literature written before 1800, one course in 19th-century literature, one course in American literature, and two electives.

Majors emphasizing creative writing must take seven upper-division courses, including two introductory creative writing workshops in poetry and prose, and a third workshop at the 400-level. The remaining upper-division courses must include one course in literature written before 1900, one course in literature written after 1900 and one elective.

All major students must complete ENGL 491 Senior Seminar in Literary Studies.

Requirements for a Minor in English

The minor in English requires 20 units, or five courses, including at least two introductory courses (from among ENGL 261, ENGL 262 and ENGL 263) and at least three upper-division courses including one in literature written before 1800 and one in American literature. An English minor may enroll in no more than one creative writing workshop.

Bachelor of Arts in Narrative Studies

Narrative studies prepares students for the development and evaluation of original content for novels, films, theatre and other narrative platforms, but recognizes that the range of professional opportunities in literature and the performing arts is much wider than the roles of author, screenwriter or playwright. To recognize a good story, to critique, help shape, realize and transform it, requires a background in the history of narrative, cross-cultural and contemporary models, and an understanding of the broader context of popular culture.

Narrative Studies assumes that an effective narrative will be adapted from the medium in which it first appears as new media become available. To prepare students for a future in which the platform is likely to change, the Bachelor of Arts in Narrative Studies allows students to study across the current platforms while concentrating on the techniques of effective construction common to them all.

In so doing, it draws upon course work from several schools of art but finds its home in the humanities. To help develop the flexibility necessary to understand how stories change across platforms, students are expected

to complete at least three courses in literary and three courses in performance-based media. The remaining three courses may be chosen to reflect the student's personal preference and initial career aspirations.

MDA 490 Directed Research or MDA 494 Directed Creative Projects are capstone experiences: Students work under the guidance of a faculty member in a relevant discipline or professional field, which may include full-time faculty from the college or the participating schools of the arts. Projects intended for the stage should be done under the direction of School of Dramatic Arts faculty.

REQUIREMENTS UNITS

Nine or 10 courses totaling 36 units; no more than two at the 100- or 200-level, selected from the following lists.

Introduction to Narrative Media (choose one course):

COLT 101	Masterpieces and Masterminds: Literature and Thought of the West	4
CTCS 190	Introduction to Cinema	4
CTCS 191	Introduction to Television and Video	4
CTIN 190	Introduction to Interactive Entertainment	4
ENGL 261	English Literature to 1800	4
ENGL 262	English Literature Since 1800	4
ENGL 263	American Literature	4
ENGL 471	Literary Genres and Film	4
ENGL 481	Narrative Forms in Literature and Film	4
FACS 150	Visual Culture and Literacy I	4
PHIL 446	Aesthetics and the Film	4
THTR 125	Text Studies for Production	4
THTR 403	The Performing Arts	4

Writing and Narrative Forms (choose one or two courses, totaling 4 units):

CTWR 412	Introduction to Screenwriting, and	2
CTWR 415a	Advanced Writing	2
ENGL 303	Introduction to Fiction Writing	4
ENGL 305	Introduction to Creative Nonfiction	4
ENGL 405*	Fiction Writing	4, max 8
THTR 365	Playwriting I	4
THTR 366*	Playwriting II	4

Popular Culture and Ethnicity (choose one course):

AMST 200	Introduction to American Studies and Ethnicity	4
AMST 274	Exploring Ethnicity Through Film	4
AMST 285	African-American Popular Culture	4
ANTH 333	Forms of Folklore	4
COLT 365	Literature and Popular Culture	4
CTCS 192	Race, Class and Gender in American Film	4
CTCS 392	History of the American Film, 1925–1950	4
CTCS 393	History of the American Film, 1946–1975	4

CTCS 394	History of the American Film, 1977–Present	4
CTCS 407	African-American Cinema	4
CTCS 414	Latina/o Screen Cultures	4
ENGL 392	Visual and Popular Culture	4
HIST 380	American Popular Culture	4
MUSC 400	The Broadway Musical: Reflections of American Diversity, Issues and Experiences	4
MUSC 420	Hip-Hop Music and Culture	4
MUSC 460	Film Music: History and Function From 1930 to the Present	4
THTR 395	Drama as Human Relations	4
THTR 405	Performing Identities	4

Narrative in Cross-cultural Perspective (choose one course):

ANTH 372	Interpretation of Myth and Narrative	4
COLT 264	Asian Aesthetic and Literary Traditions	4
CTCS 200	History of the International Cinema I	4
CTCS 201	History of the International Cinema II	4
EALC 125	Introduction to Contemporary East Asian Film and Culture	4
EALC 332	Korean Literature in English Translation	4
EALC 342	Japanese Literature and Culture	4
EALC 452	Chinese Fiction	4
EALC 455	Japanese Fiction	4
ENGL 444	Native American Literature	4
ENGL 445	The Literatures of America: Cross-Cultural Perspectives	4
FREN 320	French Cinema and French Society: 1900 to the Present	4
GERM 360	20th Century German Prose: Texts and Films	4
ITAL 446	Italian Cinema and Society	4
THTR 210***	Theory and Practice of World Theatre I	4
THTR 211***	Theory and Practice of World Theatre II	4

Western Narrative in Historical Perspective (choose one course):

CLAS 325	Ancient Epic	4
CLAS 337	Ancient Drama	4
CLAS 380	Approaches to Myth	4
COLT 312	Heroes, Myths and Legends in Literature and the Arts	4
ENGL 423*	English Literature of 18th Century (1660–1780)	4
ENGL 424*	English Literature of the Romantic Age (1780–1832)	4
ENGL 425*	English Literature of the Victorian Age (1832–1890)	4
ENGL 426*	Modern English Literature (1890–1945)	4
ENGL 430	Shakespeare	4
ENGL 440**	American Literature to 1865	4

ENGL 441**	American Literature, 1865–1920	4	professional schools who wish to complement their majors with courses that investigate the politics of culture and cultural negotiation. Students are required to have a minimum 3.0 GPA and the completion of 32 units for admission to the minor.
GERM 340	German Prose Fiction From Goethe to Thomas Mann	4	
GERM 372	Literature and Culture in Berlin of the 1920s	4	
SLL 302	Modern Russian Literature	4	
SLL 344	Tolstoy: Writer and Moralist	4	
SLL 345	Literature and Philosophy: Dostoevsky	4	REQUIRED COURSES COMM 384 Interpreting Popular Culture CTCS 407 African American Cinema, or CTCS 411 Film, Television and Cultural Studies ENGL 392 Visual and Popular Culture, or ENGL 472 Literature and Related Arts
SLL 346	Russian Drama and the Western Tradition	4	
SPAN 304	Survey of Fiction (taught in Spanish)	4	
THTR 301***	Greek and Roman Theatre	4	
THTR 302***	Shakespeare and His World	4	
Contemporary Fiction and Drama (choose one course):			ELECTIVE COURSES Choose three courses from the following. Students must take two electives outside the department of their major. Students may not take any more than two electives from any one department or school.
AMST 448	Chicano and Latino Literature	4	
AMST 449	Asian American Literature	4	
COLT 345	Realist Fiction	4	
COLT 348	Modernist Fiction	4	
COLT 351	Modern and Contemporary Drama	4	ANTH 263 Exploring Culture Through Film AHIS 363 Race, Gender, and Sexuality in Contemporary Art AHIS 469 Critical Approaches to Photography CTCS 406 History of American Television CTCS 407 African American Cinema CTCS 478 Culture, Technology and Communications COMM 339 Communication Technology and Culture COMM 340 The Cultures of New Media COMM 360 The Rhetoric of Los Angeles COMM 370 The Rhetoric of Ideas: Ideology and Propaganda COMM 395 Gender, Media and Communication COLT 365 Literature and Popular Culture ENGL 473 Literature and Society ENGL 478 Sexual/Textual Diversity FACS 350 Art Theory and Criticism FREN 320 French Cinema and French Society: 1900 to the Present HIST 225 Film, Power and American Society HIST 255 American Popular Culture PAS 400 New Models of Art in City-Space SOCI 342 Race Relations
COLT 420	The Fantastic	4	
COLT 472	Los Angeles Crime Fiction	4	
COLT 475	Politics and the Novel	4	
EALC 354	Modern Chinese Literature in Translation	4	
ENGL 375	Science Fiction	4	COMM 339 Communication Technology and Culture COMM 340 The Cultures of New Media COMM 360 The Rhetoric of Los Angeles COMM 370 The Rhetoric of Ideas: Ideology and Propaganda COMM 395 Gender, Media and Communication COLT 365 Literature and Popular Culture ENGL 473 Literature and Society ENGL 478 Sexual/Textual Diversity FACS 350 Art Theory and Criticism FREN 320 French Cinema and French Society: 1900 to the Present HIST 225 Film, Power and American Society HIST 255 American Popular Culture PAS 400 New Models of Art in City-Space SOCI 342 Race Relations
ENGL 442**	American Literature, 1920 to the Present	4	
ENGL 447	African American Narrative	4	
ENGL 455	Contemporary Prose	4	
ENGL 463	Contemporary Drama	4	
FREN 347	Race, Gender and Power in Francophone Literature	4	COMM 339 Communication Technology and Culture COMM 340 The Cultures of New Media COMM 360 The Rhetoric of Los Angeles COMM 370 The Rhetoric of Ideas: Ideology and Propaganda COMM 395 Gender, Media and Communication COLT 365 Literature and Popular Culture ENGL 473 Literature and Society ENGL 478 Sexual/Textual Diversity FACS 350 Art Theory and Criticism FREN 320 French Cinema and French Society: 1900 to the Present HIST 225 Film, Power and American Society HIST 255 American Popular Culture PAS 400 New Models of Art in City-Space SOCI 342 Race Relations
SLL 303	Contemporary Russian Literature	4	
SLL 348	Nabokov's Novels: Art and Exile	4	
THTR 300	Introduction to Modern Drama	4	
THTR 314***	Advanced Topics in Modern Drama	4	

Two additional courses (three if CTWR 412/CTWR 414 are chosen) (8 units) at the upper-division 300 or 400 level, from different departments, chosen from the lists above.

Capstone Enrollment:

MDA 490x	Directed Research, or	
MDA 494	Directed Creative Project	4

*Prerequisite required

**Corequisite required

***Recommend preparation suggested

Total: Nine or 10 courses, including at least seven at the upper-division level, for a total of 36 units.

Minor in Cultural Studies

Cultural studies is an interdisciplinary field of study that examines a broad array of issues of culture, including popular culture, identity, subcultures, nationalism, global culture and ethnography. This minor is designed for students majoring in the humanities or in the

professional schools who wish to complement their majors with courses that investigate the politics of culture and cultural negotiation. Students are required to have a minimum 3.0 GPA and the completion of 32 units for admission to the minor.

REQUIRED COURSES		UNITS
COMM 384	Interpreting Popular Culture	4
CTCS 407	African American Cinema, or	
CTCS 411	Film, Television and Cultural Studies	4
ENGL 392	Visual and Popular Culture, or	
ENGL 472	Literature and Related Arts	4

ELECTIVE COURSES		UNITS
Choose three courses from the following. Students must take two electives outside the department of their major. Students may not take any more than two electives from any one department or school.		

ANTH 263	Exploring Culture Through Film	4
AHIS 363	Race, Gender, and Sexuality in Contemporary Art	4
AHIS 469	Critical Approaches to Photography	4
CTCS 406	History of American Television	4
CTCS 407	African American Cinema	4
CTCS 478	Culture, Technology and Communications	4
COMM 339	Communication Technology and Culture	4
COMM 340	The Cultures of New Media	4
COMM 360	The Rhetoric of Los Angeles	4
COMM 370	The Rhetoric of Ideas: Ideology and Propaganda	4
COMM 395	Gender, Media and Communication	4
COLT 365	Literature and Popular Culture	4
ENGL 473	Literature and Society	4
ENGL 478	Sexual/Textual Diversity	4
FACS 350	Art Theory and Criticism	4
FREN 320	French Cinema and French Society: 1900 to the Present	4
HIST 225	Film, Power and American Society	4
HIST 255	American Popular Culture	4
PAS 400	New Models of Art in City-Space	4
SOCI 342	Race Relations	4

Total units: 24

For more information or to apply to this minor, contact the Department of English, USC Dornsife College of Letters, Arts and Sciences.

Interdisciplinary Minor in Early Modern Studies

This minor brings together the resources of the departments of English, History and Art History to study the literatures and cultures of Europe and the Americas from the late medieval period to 1800. It draws upon courses from the departments of French and Italian, Spanish and Portuguese, Philosophy, American Studies and Ethnicity, the USC Thornton School of Music, and the USC School of Dramatic Arts.

The minor focuses on the interplay of literary and historical methodologies while promoting an area study in

a wide context. Majors in any participating department can complement the strengths in their home department with courses in other participating departments; students with majors in most other areas should have room for the 20 units necessary to complete the minor.

The minor includes a capstone course, a senior seminar based on the resources of the Early Modern Studies Institute (a consortium between USC and the Huntington Library), which enables students to learn about current issues in this cross-disciplinary field and about research techniques employed to deal with those emergent issues.

Through its Early Modern Studies Institute, USC has recognized that the study of the literatures and cultures of Europe and the Americas prior to 1800 reaches beyond disciplinary boundaries. English studies are also historical, continental, multinational and multilingual. Historical studies are also literary and sociological. Both studies are enmeshed in art history and music. This cross-disciplinary understanding of early modern studies provides a model for research in many areas of the humanities and social sciences. Students who complete this minor will be able to use both literary and historical analyses to investigate other questions in which they are interested.

The minor requires 20 units. As with all minors, students must include at least four upper-division courses and four courses dedicated exclusively to this minor (not used for credit toward a major, another minor or general education requirements). Students must select four courses outside their major department.

REQUIREMENTS, LOWER-DIVISION		UNITS
Choose one, 4 units:		
AHIS 230	Art and Culture in Early Modern Europe	4
ENGL 261	English Literature to 1800	4
HIST 103	The Emergence of Modern Europe	4

REQUIREMENTS, UPPER-DIVISION	
Choose at least one course from each of the following four categories:	
Literary Studies (4 units):	
ENGL 420, ENGL 421, ENGL 422, ENGL 423, FREN 351, FREN 470, FREN 471, FREN 472, ITAL 350, ITAL 430, ITAL 435, SPAN 350, SPAN 352	

Historical Analysis (4 units):
 AHIS 304, AHIS 343, AHIS 344, AMST 446, HIST 309, HIST 312, HIST 316, HIST 325, HIST 331, HIST 410, PHIL 320

Case Studies in Early Modern Discourse and History (4 units):

AHIS 430, AHIS 433, AHIS 453, AMST 373, DANC 380, ENGL 430, ENGL 444, ENGL 461, ENGL 465, ENGL 469, HIST 307, HIST 318, HIST 349, HIST 351, HIST 370, HIST 408, HIST 470, HIST 473, HIST 474, ITAL 450, MPEM 450, PHIL 421, PHIL 422, PHIL 423, SPAN 455, SPAN 460, THTR 302, THTR 313, THTR 354

Senior Seminar in Early Modern Studies (capstone):

ENGL 497	Seminar in Early Modern Studies	4
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Double Majors

The department strongly encourages majoring in both English and in another department in the USC Dornsife College of Letters, Arts and Sciences or in another school of the university.

English Honors Program

Candidates for the B.A. in English can receive a designation on their transcripts of departmental honors by successfully completing a senior honors thesis while enrolled in ENGL 496, and having a 3.5 final GPA. ENGL 491 Senior Seminar in Literary Studies is a prerequisite for ENGL 496. Students with a minimum GPA of 3.0 overall and 3.5 in English courses can apply for ENGL 496; application is due at the start of fall semester of senior year. For additional information, contact a departmental adviser or the director of undergraduate studies.

Teaching Credential Requirements

Credential requirements in California and elsewhere are complex and changeable. Students interested in preparing for public school teaching should contact the Credentials Office, Rossier School of Education (or refer to page 567xx), and the undergraduate adviser in the English department for up-to-date information. The English department usually offers courses that satisfy most, if not all, of these requirements.

Graduate Degrees

Admission Requirements

Requirements for admission to study in the department of English include: scores satisfactory to the department in both the verbal and quantitative General Test and the literature Subject Test of the Graduate Record Examinations; evidence of competence in writing English and interpreting English literature, as demonstrated by two samples of written work by the applicant on literary subjects; a satisfactory written statement by the applicant of aims and interests in graduate work; letters of recommendation from at least three college instructors (English instructors preferred); and grades satisfactory to the department earned by the applicant at other institutions.

Degree Requirements

These degrees are under the jurisdiction of the Graduate School. Refer to the Graduate School section of this catalogue (page 97xx) for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School.

Master of Arts in English

The department does not accept applicants for a Master of Arts degree. All graduate work in English at USC is taken as part of a Ph.D. program, and the M.A. in English is intended only as a transitional degree in the process of completing requirements for the Ph.D.

A student admitted to the graduate program may choose later to earn a terminal M.A. degree, or may be invited by the department to attempt a terminal degree. The terminal M.A. in English may be earned by completing 30 units (normally eight courses) of graduate study in English or in other departments at USC (as approved by the graduate director) with an accumulated GPA of at least 3.0, and by passing the screening procedure.

A maximum of four units of 590 Directed Research and four transfer units may count toward the 30 units minimum required for the M.A. degree.

Doctor of Philosophy in English

Students may earn the Ph.D. in English by successfully completing requirements in the English and American literature track.

English and American Literature

Application deadline: December 1

This program prepares students for research and teaching in all areas of English and American literary studies. The program offers the study of texts in their historical and cultural contexts as well as theoretical, interdisciplinary and cross-cultural approaches to literature.

Graduate Curriculum and Unit Requirements

The graduate curriculum is divided into 500-level foundation courses and 600-level advanced courses. The 500-level courses offer fundamental work in theory and in the history of British and American literatures and cultures. The 600-level courses feature advanced studies in theory, core requirements in film and literature, interdisciplinary studies, transhistorical studies in genres and sub-genres, individual writers, gender studies, multi-cultural literatures and societies, and special topics. Although students will normally take 500-level courses leading up to the screening procedure (see Screening Procedure) and 600-level courses thereafter, students, after consultation with their advisers, may be permitted to take 600-level courses in the first semesters of their graduate training.

Occasionally students who lack adequate undergraduate training in any given area may be required by the graduate director to enroll in appropriate 400-level courses.

The student's course work must total at least 64 units. No more than 8 units of 794 Doctoral Dissertation and no more than four units of 790 Research may count toward the 64 units. A maximum of 12 transfer units, approved by the graduate director, is allowed toward the 64 units minimum required by the Ph.D. (See Transfer of Credit, page 343xx.)

Advisement

The student will be assigned a faculty mentor in his or her first semester in the graduate program and will be encouraged in subsequent semesters to begin putting together an informal qualifying exam committee. The makeup of the qualifying exam committee may change as the interests of the student change. The faculty mentor and informal qualifying exam committee will assist the student in planning a program of study appropriate to the student's interests leading to the screening procedure.

Screening Procedure

In the semester immediately following the completion of 20 units of courses, the students will be screened. Passing this procedure is prerequisite to continuation in the doctoral program. The faculty mentor will write a report summarizing the student's course work, grades and instructor comments. The graduate studies committee will consider the student's record and determine

if he or she is qualified to go on to the Ph.D. On successful completion of screening, the student may apply for the transfer of graduate credit from other institutions, up to a maximum of 12 units.

Qualifying Exam Committee

Immediately following successful completion of the screening procedure, the student will nominate formally a five-member qualifying exam committee, including a chair and three other members from the English Department who are in the student's areas of interest and an outside member from another Ph.D.-granting department. The committee must be in place and approved by the Graduate School at the time the student chooses a dissertation topic, writes the dissertation prospectus and schedules a qualifying examination.

Field Examinations

In the semester following the completion of courses, and before submission of the dissertation prospectus, the student must take the field examinations. These are take-home essays in three broad fields preparatory to the dissertation. The fields are chosen and the questions developed by the student in consultation with a committee of three examiners chosen by the student. The field examinations may be repeated once in the semester immediately following an unsuccessful attempt. The committee may ask the student to retake one, two or all three fields.

Qualifying Examination

Following completion of course work and the field examinations, the student must sit for a qualifying examination, at a time mutually agreed upon by the student and the qualifying exam committee. This is an examination given in the subject of the student's proposed dissertation research. No less than one month before the qualifying examination, the student will submit to the qualifying exam committee a dissertation prospectus. The prospectus, it is understood, will not be a polished dissertation proposal, but at a minimum it should display a strong knowledge of the subject, much of the relevant secondary material and other contexts crucial to the writing of the dissertation, and should present a workable plan of attack as well as a reasonably sophisticated understanding of the theoretical assumptions involved in the subject.

The qualifying examination will consist of both written and oral portions. It will focus on the dissertation area and its contexts with the specific format and content of the examination being negotiated among the student and all members of the examination committee. Upon successful completion of the qualifying examination, the student proceeds to the writing of the doctoral dissertation.

Dissertation

The final stage of the program is the submission of a dissertation that makes an original and substantial contribution to its field of study. Dissertations being written in the department are now richly varied, and this diversity is encouraged.

Foreign Language

Ph.D. students are required to demonstrate proficiency in at least one foreign language. This may be

demonstrated by completing a course in the literature of that language at the 400 or 500 level (with a grade of B [3.0] or better), or by passing a foreign language exam that tests proficiency in reading comprehension and translation. Ph.D. students may also be required to demonstrate proficiency in additional languages, as determined by the qualifying exam committee in view of the student's proposed field of research.

Doctor of Philosophy in Literature and Creative Writing

Application deadline: December 1

The program provides dual emphasis in literature and creative writing, culminating in the dissertation, which combines critical analysis with creative originality. Roughly half of the dissertation is based on original research, that is to say, research contributing to knowledge which enriches or changes the field. Doctoral candidates not only read and write texts as finished products of scholarship in researching their creative work's literary and historical milieu, but also consider the text as writers create it, then compose texts as writers, a process that goes to the source of the study of literature and of literature itself. This integration of literature and creative writing is reflected in the structure of the dissertation, which introduces the creative work within a context of critical inquiry, bringing together the examination and embodiment of the literary act, a new model of scholarship and creative innovation.

Ph.D. candidates in literature and creative writing must pass the same departmental screening examination taken by Ph.D. candidates in Literature who are not working in the area of creative writing. The exam tests students in various areas of emphasis (British literature, American literature, poetry, prose, etc.) and literature and historical periods as a measure of their preparedness to undertake independent research.

The literature and creative writing student takes 64 units in all, 32 in literature, 24 in creative writing workshops and seminars and 8 units of dissertation studies credits.

Admission Requirements

Requirements for admission to study in the department of English include: scores satisfactory to the department in both the verbal and quantitative General Test and the literature Subject Test of the Graduate Record Examinations; evidence of experience and ability in creative writing, as demonstrated by a creative writing sample; evidence of competence in writing English and interpreting English literature, as demonstrated by a sample of written work by the applicant on literary subjects; a satisfactory written statement by the applicant of aims and interests in graduate work; letters of recommendation from at least three college instructors; and grades satisfactory to the department earned by the applicant at other institutions. This program will accept applicants with B.A. degrees or transfer students with an M.A. or MFA in creative writing.

Degree Requirements

These degrees are under the jurisdiction of the Graduate School. Refer to the Graduate School section of this catalogue (page 97xx) for general regulations. All courses

applied toward the degrees must be courses accepted by the Graduate School.

Graduate Curriculum and Unit Requirements

The graduate curriculum is divided into 500-level foundation courses and 600-level advanced courses. The 500-level courses offer fundamental work in theory and in the history of British and American literatures and cultures. The 600-level courses feature advanced studies in theory, creative writing seminars and workshops and special topics. Although students will normally take 500-level courses leading up to the screening procedure (see Screening Procedure) and 600-level courses thereafter, students after consultation with their advisers may be permitted to take 600-level courses in the first semester of their graduate training.

The student's course work must total at least 64 units. No more than eight units of 794 Doctoral Dissertation and no more than four units of 790 Research may count toward the 64 units. A maximum of 12 transfer units, approved by the graduate director, is allowed toward the 64 units minimum required by the Ph.D. (See Transfer of Course Work, page 85xx.)

Advisement

The student will be assigned a faculty mentor in his or her first semester in the graduate program and will be encouraged in subsequent semesters to begin putting together an informal qualifying exam committee. The makeup of the qualifying exam committee may change as the interests of the student change. The faculty mentor and informal qualifying exam committee will assist the student in planning a program of study appropriate to the student's interests leading to the screening procedure.

Screening Procedure

At the end of the student's fourth semester (second semester for students who enter with an M.A. or MFA degree or near equivalent), the student will sit for a departmental examination, which is part of a comprehensive screening procedure. Rarely, and only with the approval of the graduate director and the graduate committee, will a student be allowed to postpone the departmental examination and the screening procedure, and then only for one year. Prior to the screening procedure, the student will be allowed to take a maximum of four units of independent study (ENGL 590), and that independent study will normally be used to prepare for the departmental examination; all other units must be in the 500- or 600-level seminar.

Qualifying Exam Committee

Immediately following successful completion of the screening procedure, the student will nominate formally a five-member qualifying exam committee, including a chair and three other members from the English Department who are in the student's areas of interest and an outside member from another Ph.D.-granting department. The committee must be in place and approved by the Graduate School at the time the student chooses a dissertation topic, writes the dissertation prospectus and schedules a qualifying examination.

Qualifying Examination

Following completion of course work, the student must sit for a qualifying examination, at a time mutually agreed upon by the student and the qualifying exam committee.

This is a field examination given in the subject of the student's proposed dissertation research. No less than one month before the qualifying examination, the student will submit to the qualifying exam committee a dissertation prospectus. The prospectus, it is understood, will not be a polished dissertation proposal, but at a minimum it should display a strong knowledge of the subject, much of the relevant secondary material and other contexts crucial to the writing of the dissertation, and should present a workable plan of attack as well as a reasonably sophisticated understanding of the theoretical assumptions involved in the subject.

The qualifying examination will consist of both written and oral portions with special emphasis areas in creative writing. It will focus on the dissertation area and its contexts with the specific format and content of the examination being negotiated among the student and all members of the examination committee. Upon successful completion of the qualifying examination the student proceeds to the writing of the doctoral dissertation.

Dissertation

The final stage of the program is the submission of a creative dissertation that makes an original, substantial and publishable contribution to creative literature: a book of poems, a novel, a collection of short stories.

Foreign Language

Ph.D. students are required to demonstrate proficiency in at least one foreign language. This may be demonstrated by completing a course in the literature of that language at the 400 or 500 level (with a grade of B [3.0] or better) or by passing a foreign language exam that tests proficiency in reading comprehension and translation. Ph.D. students may also be required to demonstrate proficiency in additional languages, as determined by the qualifying exam committee in view of the student's proposed field of research.

Common Requirements

Transfer of Credit

A Transfer Credit Statement is prepared by the Degree Progress Department for students admitted to full graduate standing. The application of any available transfer credit is contingent on successful completion of the screening exam and is determined by the director of graduate studies no later than the end of the second year according to the following guidelines: credit will only be allowed for courses (1) from accredited graduate schools; (2) of grade B (3.0 on a four-point scale) or better; (3) constituting a fair and reasonable equivalent to current USC course work at the graduate level and fitting into the program for the degree; and (4) approved by the Graduate School. Graduate transfer credit will not be granted for life experience, credit by examination, non-credit extension courses, correspondence courses or thesis course supervision.

The maximum number of transfer credits which may be applied toward the Master of Arts degree is four units. The maximum number of transfer credits which

may be applied toward the Ph.D. degree is 12 units. The Graduate School stipulates that transfer units must have been completed within 10 years of admission for the doctoral program to be applied toward the degree.

Experience in Teaching

This requirement may be fulfilled by two to four years' service as a teaching assistant in the Writing Program or equivalent experience as determined by the director of the Graduate Studies Program.

Graduate Activity and Support

The English Department is committed to the development of its graduate students as professionals. To this end, the department provides a number of opportunities for professional activity. In addition, the Association of English Graduate Students (AEGS) hosts a variety of lectures, discussions and forums throughout the year. To support the student's professional activities outside of USC, the department also provides some funding for travel to conferences and professional meetings, along with a full range of placement, advising and support activities. Graduate creative writing students will host lectures, discussions and forums in poetry and fiction studies.

Courses of Instruction

ENGLISH (ENGL)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

ENGL 105x Creative Writing for Non-Majors (4, max 8, FaSp) Introductory workshop in writing poetry, short fiction and nonfiction for love of the written and spoken word. Not for English major or English (Creative Writing) major credit.

ENGL 250gm The African Diaspora (4, FaSp) (Enroll in AMST 250gm)

ENGL 261 English Literature to 1800 (4, FaSpSm) Intensive reading of major writers to 1800.

ENGL 262 English Literature since 1800 (4, FaSpSm) Intensive reading of major writers, 1800–1950.

ENGL 263 American Literature (4, FaSpSm) Intensive reading of representative writers.

ENGL 285m African American Popular Culture (4, Sp) (Enroll in AMST 285m)

ENGL 290 Cultural Studies: Theories and Methods (4, FaSpSm) Introduction to the theories, methods, and history of cultural studies, with coverage of contemporary debates over censorship and the politics of authorship, seriality and originality.

ENGL 298 Introduction to the Genre of Fiction (4, FaSpSm) An introduction to the close reading of fiction and the understanding of the genre as an aesthetic and historical phenomenon.

ENGL 299 Introduction to the Genre of Poetry (4, FaSp) Historical survey of the traditions of lyric poetry from Shakespeare to the contemporary, examining the genre's multiple forms of literary, visual, and aural expression.

ENGL 303 Introduction to Fiction Writing (4, FaSp) Introduction to the techniques and practice of writing prose fiction.

ENGL 304 Introduction to Poetry Writing (4, FaSp) Introduction to the techniques and practice of writing poetry.

ENGL 305 Introduction to Nonfiction Writing (4, FaSp) Introduction to the techniques and practice of lyric essay, memoir, personal narrative, and scientific, medical, nature, culinary and travel writing.

ENGL 310 Editing for Writers (4) Practical course in relations between editing and the creative process in fiction, poetry, and exposition.

ENGL 350 Literature of California (4) Novels, stories, essays, poems, and plays written in and about California from the Gold Rush to the present.

ENGL 375 Science Fiction (4, FaSp) Investigation of the scope and possibilities of British and American science fiction as a genre, with some attention to its historical development.

ENGL 376 Comics and Graphic Novels (4, FaSpSm) Introduction to issues in visual and popular culture, focused on critical and historical interpretation of words and images in comic books and graphic novels.

ENGL 390 Special Problems (1–4, FaSp) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

ENGL 392 Visual and Popular Culture (4, FaSp) Course in the theory and practices of "popular culture," highlighting modern and contemporary culture, film, video and popular music, as well as narrative forms.

ENGL 395 Junior Honors Seminar (4, Sp) Selected subjects; offered in spring only and restricted to honors students.

ENGL 400 Advanced Expository Writing (2–4, Fa) Intensive practice intended to develop a high level of competence in writing expository prose.

ENGL 401 The Rhetoric of Written Composition (4) Theories of rhetoric as they apply to written composition, with emphasis upon pedagogical applications. The course is designed for but not limited to prospective teachers of English.

ENGL 404 The Writer in the Community (2–4, max 8, FaSp) Apprenticeship with experienced writer-teachers, providing students with a pedagogical framework and practical experience for teaching creative writing in schools and community settings.

ENGL 405 Fiction Writing (4, max 8, FaSp) A practical course in composition of prose fiction. *Prerequisite:* ENGL 303 or ENGL 305.

ENGL 406 Poetry Writing (4, max 8, FaSp) A practical course in poetry writing. *Prerequisite:* ENGL 304.

ENGL 407 Advanced Fiction Writing (4, max 8, FaSp) *Prerequisite:* ENGL 405.

ENGL 408 Advanced Poetry Writing (4, max 8, FaSp) *Prerequisite:* ENGL 406.

ENGL 409 The English Language (4) Instruction in the major grammatical systems of the English language, with particular emphasis on their relevance to language activities in the elementary classroom.

ENGL 410 History and Grammar of Modern English (4, FaSp) History and grammar of modern English as described by current linguistics; comparison with traditional grammar; application of grammar to stylistic analysis.

ENGL 412 Analysis of Written Persuasion (4, FaSp) Persuasive discourse, including structure, intention, and figurative language; analysis of texts in various humanistic, scientific, and socio-scientific disciplines.

ENGL 420 English Literature of the Middle Ages (1100–1500) (4, FaSp) Selected studies in major figures, genres, and themes of Middle English literature to Malory, with special emphasis on Chaucer. *Prerequisite:* ENGL 261.

ENGL 421 English Literature of the 16th Century (4) Selected studies in the non-dramatic literature of Renaissance England, with emphasis on Sidney, Spenser, and Shakespeare. *Prerequisite:* ENGL 261.

ENGL 422 English Literature of the 17th Century (4) Selected studies of prose and poetry in the age of Bacon, Donne, Jonson, Herbert, Browne, Marvell, and Milton. *Prerequisite:* ENGL 261.

ENGL 423 English Literature of the 18th Century (1660–1780) (4) Selected studies in poetry, prose, and fiction of such writers as Defoe, Dryden, Fielding, Richardson, Pope, Swift, and Johnson. *Prerequisite:* ENGL 261.

ENGL 424 English Literature of the Romantic Age (1780–1832) (4) Selected studies in major writers, including Blake, Austen, Wordsworth, Coleridge, Byron, Mary Shelley, P.B. Shelley, and Keats. *Prerequisite:* ENGL 262.

ENGL 425 English Literature of the Victorian Age (1832–1890) (4) Selected studies in the prose and poetry of such figures as Tennyson, Dickens, the Brontës, the Brownings, Hopkins, Arnold, Ruskin, and Newman. *Prerequisite:* ENGL 262.

ENGL 426 Modern English Literature (1890–1945) (4) Studies in English literary modernism, including the prose of Conrad, Joyce, and Woolf and the poetry of Pound, Eliot, Yeats, and Auden. *Prerequisite:* ENGL 262.

ENGL 430 Shakespeare (4, FaSp) Major history plays, comedies, and tragedies.

ENGL 440 American Literature to 1865 (4, FaSp) American poetry and prose to the Civil War with special attention to Irving, Cooper, Poe, Hawthorne, Emerson, Thoreau, Melville, and Whitman. *Corequisite:* ENGL 263.

ENGL 441 American Literature, 1865 to 1920 (4, FaSp) American poetry and prose with special attention to Twain, James, Dickinson, Henry Adams, Crane, and Dreiser. *Corequisite:* ENGL 263.

ENGL 442 American Literature, 1920 to the Present (4, FaSp) American poetry, fiction, and drama since World War I with special attention to Eliot, Frost, Hemingway, Fitzgerald, O'Neill, Stevens, Faulkner, and Nabokov. *Corequisite:* ENGL 263.

ENGL 444m Native American Literature (4, FaSp) Survey of Native American literature, including oral traditions and print genres, such as short story, poetry, novel, and autobiography, from 1700 to the present. *Recommended preparation:* ENGL 263.

ENGL 445m The Literatures of America: Cross-Cultural Perspectives (4) Introduction to African-American, Chicano, Asian American, and Native-American literatures — and to the literary diversity of American cultures.

ENGL 446 African-American Poetry and Drama (4) Survey of black poetry and plays in America from the Emancipation to the present, with special emphasis on the new poets and dramatists of the current "Black revolution."

ENGL 447m African-American Narrative (4) Development of the novel in African-American literature beginning with the anti-slavery fiction of William W. Brown and his pre-Emancipation contemporaries and concluding with the emerging novelists of the late sixties.

ENGL 448m Chicano and Latino Literature (4, FaSp) (Enroll in AMST 448m)

ENGL 449m Asian American Literature (4, FaSp) (Enroll in AMST 449m)

ENGL 451 Periods and Genres in American Literature (4, max 8, FaSp) A concentrated reading and criticism of the works of one period or one genre of American literature; for example, colonial literature, the American Renaissance, American poetry, American drama.

ENGL 452 Modern Poetry (4) Study of poetry written in English from 1900 to 1945, with special emphasis on American modernists of the first two decades. *Recommended preparation:* ENGL 262, ENGL 263.

ENGL 454 Aesthetic Philosophy and Theory (4) (Enroll in COLT 454)

ENGL 455 Contemporary Prose (4) Study of prose written in English since 1945, principally fiction of the past two decades.

ENGL 456 Contemporary Poetry (4) Study of poetry written in English since 1945, with special emphasis on the last two decades.

ENGL 461 English Drama to 1800 (4, FaSp) Representative plays, especially those of the Elizabethan, Jacobean, and Restoration periods. *Corequisite:* ENGL 261.

ENGL 462 British and American Drama 1800–1950 (4, FaSp) Representative plays of England, Ireland, and the United States, especially those written after 1890. *Corequisite:* ENGL 262.

ENGL 463 Contemporary Drama (4) Selected British, Irish, and American drama from the post World War II period (1945 to the present).

ENGL 465 The English Novel to 1800 (4) Theory and practice of fiction in works of writers such as Defoe, Richardson, Fielding, Sterne, Burney, and Smollett. *Corequisite:* ENGL 261.

ENGL 466 The 19th Century English Novel (4) Theory and practice of fiction in works of major writers such as Austen, Dickens, Thackeray, George Eliot, Meredith, and Hardy. *Corequisite:* ENGL 262.

ENGL 467 The Modern Novel (4, FaSp) Studies of the narrative experiments and innovations in fiction following the realist novel; emphasis on gender, empire and class and the pluralities of "modernisms."

ENGL 469 Women in English Literature before 1800 (4) English poetry, plays, novels, and discursive prose by and about women from 1375 to 1800.

ENGL 470 Women in English and American Literature after 1800 (4) Women as writers and as subjects, with special emphasis on feminist and liberationist traditions and on changing female images after 1800.

ENGL 471 Literary Genres and Film (4, FaSp) Literary studies in the relationship between fiction and drama and their adaptation as films.

ENGL 472 Literature and Related Arts (4, FaSp) An examination of how literature and related arts intersect in a particular cultural milieu. Selected topics.

ENGL 473 Literature and Society (4, FaSp) Theoretical and applied studies of literature in English as social activity and cultural production; its expression of, and influence upon, social values, concepts, and behavior.

ENGL 474m Literature, Nationality and Otherness (4, FaSp) English literature written about or in the British colonies and their post-colonial nations, including African, Asian, Pacific, and American countries. Emphasis on texts by other than British and United States authors. Completion of general education literature requirement highly recommended.

ENGL 475 Politics and the Novel (4) (Enroll in COLT 475)

ENGL 476m Images of Women in Contemporary Culture (4, FaSp) Representations of women and gender relations in contemporary literature and mass culture, using the tools of feminist, literary, and political theory.

ENGL 478m Sexual/Textual Diversity (4, FaSp) Questions of gay and lesbian identity, expression and experience in a variety of literary and cultural forms; emphasis on sexual politics, equality and difference.

ENGL 479 History of Literary Criticism (4, FaSp) Philosophies of literary criticism from Plato to the end of the 19th century; the relationship between literary criticism and its contemporary literature.

ENGL 480 Modern Literary Criticism: Theory and Practice (4, FaSp) Analysis of philosophies and methods of modern schools of criticism; writing critical essays.

ENGL 481 Narrative Forms in Literature and Film (4, FaSp) Critical approaches to narrative form in literature and film; readings and films from several genres and periods, emphasis on gender, ethnic, and cultural studies.

ENGL 490x Directed Research (1–8, max 12, FaSp) Individual research and readings. Not available for graduate credit.

ENGL 491 Senior Seminar in Literary Studies (4, FaSpSm) Selected problems in literary history and criticism.

ENGL 495 Senior Honors Seminar (4, Fa) Advanced seminar involving extensive reading, research, and discussions. Selected subjects; offered in Fall only and restricted to Honors students.

ENGL 496 Senior Honors Thesis (4, Sp) Seminar in workshop form to accompany completion of Senior Honors Thesis. Bi-weekly meetings to complete thesis according to contract. *Prerequisite:* ENGL 491.

ENGL 497 Senior Seminar in Early Modern Studies (4, Sp) Intensive engagement with current research, problems, and methodologies in Early Modern discourses and cultures. Required capstone seminar for interdepartmental minor in early modern studies. Open only to seniors; open only to early modern studies minors.

ENGL 499 Special Topics (2–4, max 8, FaSp) Studies in the works of one or more authors, or in the development of a theme or genre.

ENGL 501 History of Literary and Cultural Theory (4)

The assumptions and practices of major theorists and theoretical schools from Plato to literary modernism.

ENGL 502 Contemporary Literary and Cultural Theory (4)

The assumptions and practices of major post-modern theorists and theoretical schools.

ENGL 503 Theories of History, Ideology and Politics (4)

The principal ways in which history, ideology, and politics have informed the study of literary and cultural discourse.

ENGL 504 Theories of Race, Class, and Gender (4)

The principal methods and assumptions by which race, class, and gender have been studied in reference to literary and cultural discourse.

ENGL 507 Rhetoric and Language (4)

Examination of critical and linguistic theories; may include the changing structures of English discourse, cognitive poetics, and discourse analysis.

ENGL 508 History, Theories and Practice of Cultural Studies (4, max 12, FaSp)

Looking at specific case histories, this course introduces students to the basic methods, theories and activities in cultural studies.

ENGL 510 Medieval English Literatures and Cultures (4, max 12)

Investigations of chivalry and romance, allegory, drama, popular literature in the Middle Ages, the reception of medieval literature, and other topics.

ENGL 520 Renaissance English Literatures and Cultures (4, max 12)

Studies in poetry and patronage, the popular tradition in literature and drama, the social and sexual dynamics of comedy, historical and cultural uses of genres, among other topics.

ENGL 530 Restoration and 18th Century British Literatures and Cultures (4, max 12)

Studies in prose, poetry, drama, and culture of the period 1660–1800.

ENGL 535 Literatures and Cultures of the Romantic Period (4, max 12)

Studies in British literature and culture, from the 1790s to 1830s, including gender and genre, authorship and authenticity, “romance” and revolution, forms of belief and doubt, and other topics.

ENGL 536 Literatures and Cultures of the Victorian Period (4, max 12)

Studies in British literature and society, 1837–1901, including gender and genre, industrialism, science and technology, empire and race, new forms of media and narrative, and other topics.

ENGL 540 19th Century British Literatures and Cultures (4, max 12)

Studies in the Romantics and Victorians, gender and genre, the new woman and the novel, authorship and the marketplace, science, imperialism, the crisis of narrative, and other topics.

ENGL 550 20th Century British Literatures and Cultures (4, max 12)

Studies in literary modernism, critical scrutiny and moral seriousness, poetry and politics, the Irish revival, and other topics.

ENGL 560 Early American Literatures and Cultures (4, max 12)

Studies in the literature of discovery, exploration and conquest, the Puritan migration, literary genres in Colonial America, history and myth of American origins, and other topics.

ENGL 563 Poetry and Prose Into Drama (4, Fa)

(Enroll in THTR 501)

ENGL 570 18th Century American Literatures and Cultures (4, max 12)

Studies in the rhetoric, literature, and language of the pre-revolutionary and revolutionary periods, narrative and polemical writing, the American Enlightenment, and other topics.

ENGL 580 19th Century American Literatures and Cultures (4, max 12)

Studies in canonic and non-canonic literature in the American Renaissance, cultural nationalism, the consequences of race, immigration, expansion, urbanization, science, and the marketplace, and other topics.

ENGL 590 Directed Research (1–12)

Research leading to the master’s degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

ENGL 591 20th Century American Literatures and Cultures (4, max 12)

Studies in rural and urban fictions, modernism, the shift from imagism and symbolism to confessional poetry, recovered writers, hemispheric traditions, literature and kindred arts, and other topics.

ENGL 592 Contemporary British and American Literatures and Cultures (4, max 12)

Studies in contemporary women and ethnic writers, “extra-literary” forms (journalism, autobiography), the theatre of the absurd, post-modern fabulations, and other modes and issues since World War II.

ENGL 593 Practicum in Teaching the Liberal Arts (2, FaSp)

(Enroll in MDA 593)

ENGL 595 Literary Studies Across Cultures (4, max 12)

Studies in Empire and Commonwealth literatures, post-colonialism, American hemispheric connections, African-American literary discourse, Asian American writers, dialects and the folk, and other topics.

ENGL 599 Special Topics (2–4, max 8)

Thematic, theoretical, or experimental studies in British and American literatures and cultures. (Duplicates credit in former ENGL 699.)

ENGL 600x Preparing Articles for Publication in Scholarly Journals (2, FaSp)

Development of strategies for preparing articles for publication in scholarly journals. Aspects of publication will include abstracts, introductions, argumentation, style and footnotes. Open only to Ph.D. students in English and English (Creative Writing). Not for degree credit for English and English (Creative Writing) students. Graded CR/NC.

ENGL 605 The History of Rhetoric (4, max 12)

Studies in European and American rhetoric and their contexts.

ENGL 606 Rhetoric and the Teaching of Writing (4, max 12)

Studies in the rhetoric of written composition, critical theory and pedagogy, and other topics.

ENGL 610 Theory and Criticism (4, max 12)

Studies in meaning and meaning-making, form, comparative theory, theories of history and culture, theory in the classroom, and other topics.

ENGL 620 Literature and Interdisciplinary Studies (4, max 12)

Issues and theory of studying literature in relation to history, science, politics, psychology, religion, sociology, media, the visual arts, and other disciplines.

ENGL 630 Studies in Gender (4, max 12)

History and ideology of gender studies, feminist theory, gay and lesbian discourse, and other studies in feminisms and masculinities in relation to literature.

ENGL 640 Individual Writers (4, max 12)

Studies in major and minor, canonic and non-canonic writers.

ENGL 650 Multicultural Literary Studies (4, max 12)

Theories of race and ethnicity, cultural imperialism, discourse of power and class, literatures of the Americas, and other topics.

ENGL 660 Studies in Genre (4, max 12)

History, transformation, and theory of genre; studies in epic, lyric, drama, comedy, tragedy, the novel, biography, essay, and other forms.

ENGL 678 Seminar in Film Theory and Medium Specificity (4, max 8)

(Enroll in CTCS 678)

ENGL 679 Seminar in Genre and/or Narrative Theory (4, max 8)

(Enroll in CTCS 679)

ENGL 695 Graduate Fiction Form and Theory (4, max 12)

Seminar. Studies in fiction form and function or critical theory.

ENGL 696 Graduate Poetry Writing Workshop (4, max 12)

Intensive practicum in advanced level poetry writing, intended to develop high level creative compositional ability. Open only to Creative Writing Ph.D. degree candidates.

ENGL 697 Graduate Fiction Writing Workshop (4, max 12)

Intensive practicum in advanced level fiction writing, intended to develop high level creative compositional ability. Open only to Creative Writing Ph.D. degree candidates.

ENGL 698 Graduate Poetry Form and Theory (4, max 12)

Seminar. Studies in poetry form and function or critical theory.

ENGL 700x Theories and Practices of Professional Development I (2, FaSp)

A structured environment in which to craft a research project, write a dissertation prospectus, and define areas of professional expertise. Graded CR/NC. Not available for degree credit. *Recommended preparation:* passage of screening exam.

ENGL 701X Theories and Practices of Professional Development II (2, Fa) This two-credit course helps ABD students craft their professional identities and placement materials as they make the transition from graduate school to their academic position. Not available for degree credit. Graded CR/NC.

ENGL 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

ENGL 794abcdz Doctoral Dissertation (2-2-2-2-0)
Credit on acceptance of dissertation. Graded IP/CR/NC.

Environmental Studies

Social Sciences Building B15
(213) 740-7770
FAX: 740-8566
Email: environ@dornsife.usc.edu
dornsife.usc.edu/environmental-studies
Director: James F. Haw, Ph.D.

Faculty

Professors: Katrina Edwards, Ph.D. (*Biological Sciences*); James Haw, Ph.D. (*Chemistry*); Mark Thompson, Ph.D. (*Chemistry*)

Assistant Professor: Roderick McKenzie, Ph.D.

Associate Professor of the Practice: Yael Wonlinsky-Nahmias, Ph.D.

Assistant Professor of the Practice: Juliana Wang, Ph.D.

Associate Professor (Teaching): David Ginsburg, Ph.D.

Lecturers: Lisa Collins, Ph.D.; Kristen Weiss, Ph.D.

Emeritus Professor: Thomas Flood, Ph.D. (*Chemistry*)

Undergraduate Programs

The environmental studies program offers two undergraduate majors, environmental studies (ENVS) and environmental science and health (ENSH). Each of these majors lead to either a B.A. or B.S. degree.

The environmental studies degrees are built on specialized natural science and social science courses and a set of interdisciplinary courses focusing on sustainability. The social science core courses focus on environmental problems from political, legal, economic and international perspectives. Specially designed one-semester surveys of biology, earth science and chemistry provide the natural science competency for subsequent policy or science advanced course work in environmental studies. Four concentrations are available in the environmental studies degrees: sustainability, energy and society; oceans, life and people; climate, earth and environment; and environmental public policy. Each concentration culminates in the capstone experience of a senior seminar focusing on environmental problem-solving by interdisciplinary teams. A single 24-unit environmental studies minor is derived from the core major curriculum.

The environmental science and health degrees combine the interdisciplinary courses on sustainability described above and some of the environmental social science content with traditional biology and chemistry content to provide options for students preparing for one of the health professions with an undergraduate emphasis on environmental sustainability. The B.S. in environmental science and health incorporates

recommended preparation for medical schools. The B.A. in environmental science and health may be appropriate for students preparing for other graduate or professional training as well as students pursuing double majors.

The environmental studies courses common to both majors emphasize the interdisciplinary nature of environmental problems. Some of the major courses are team-taught by faculty with complementary backgrounds in science and policy. A number of opportunities are provided for field studies from the urban Los Angeles environment to marine protected areas on the coasts of the California Channel Islands. More intensive field study opportunities include "Problems Without Passports" courses with international components. Note that some of the field studies opportunities require travel to remote, rural locations and study under sometimes physically and mentally demanding conditions. These trips require a willingness to conform to the announced guidelines for conduct and safety.

Graduate Programs

The Master of Arts degree program in environmental studies is also interdisciplinary and focuses on public policy and its related facets. Those who graduate with an M.A. in environmental studies are well prepared to pursue careers in policy, planning or management in the public, private or nonprofit sector in either this country or abroad. In addition, the curriculum provides students with a foundation for acquiring a Ph.D. in environmental studies or a related field, or a law degree. Individuals who are already employed in the pollution control and remediation field will find the M.A. degree attractive as well. Upon completion of the graduate program, students will possess extensive knowledge of environmental science, environmental statistics and economics, law and regulation, policy and planning, development and economic growth, and global issues and problems.

The Master of Science degree in environmental risk analysis focuses on providing advanced professional training for students with a B.S. degree in natural sciences or engineering. Students will pursue a core program encompassing science, engineering and finance supplemented with important skills courses in risk assessment, statistics and computer modeling and simulations. Those who graduate with the M.S. degree will be well prepared to pursue professional careers in business and industry, which build on their degrees in the natural sciences. This degree will produce individuals with the analytical and problem-solving skills of natural scientists combined with the necessary training in finance and management needed in the business world.

Undergraduate Degrees

Environmental Studies (ENVS)

REQUIRED CORE COURSES (48 UNITS)		UNITS
BISC 103Lx	General Biology for the Environment and Life	4
CHEM 103Lx	General Chemistry for the Environment and Life	4
ENST 100	Introduction to Environmental Studies	4
ENST 320ab	Water and Soil Sustainability; Energy and Air Sustainability	4-4
ENST 387	Economics for Natural Resources and the Environment	4
ENST 495	Senior Seminar in Environmental Studies	4
GEOL 160L	Introduction to Geosystems	4
IR 323	Politics of Global Environment	4
MATH 118x*	Fundamental Principles of the Calculus, or	4
MATH 125*	Calculus I	4
POSC 270	Introduction to Environmental Law and Politics	4
PSYC 274L	Statistics I	4

Bachelor of Arts in Environmental Studies

Concentration in Sustainability, Energy and Society (56 units)

In addition to the 48-unit core:

REQUIRED COURSES		UNITS
ENST 370	Marine and Coastal Environmental Policy	4
ENST 485	Role of the Environment in the Collapse of Human Societies	4
MOR 466	Business and Environmental Sustainability	4

Concentration in Oceans, Life and People (56 units)

In addition to the 48-unit core:

TWO OF THE FOLLOWING COURSES		UNITS
BISC 427	The Global Environment	4
ENST 370	Marine and Coastal Environmental Policy	4
ENST 480**	Integrated Ecosystem Management in Micronesia	4

Concentration in Climate, Earth and Environment (56 Units)

In addition to the 48-unit core:

TWO OF THE FOLLOWING COURSES		UNITS
ENST 445	Earth Climate: Past, Present, and Future	4
GEOL 470L	Environmental Hydrogeology	4
ENST 480**	Integrated Ecosystem Management in Micronesia	4

Concentration in Environmental Public Policy (56 Units)

In addition to the 48-unit core:

REQUIRED COURSES		UNITS
PPD 420	Environmental Impact Assessment	4
PPD 461	Sustainable Communities, Policy and Planning	4

Bachelor of Science in Environmental Studies Concentration in Sustainability, Energy and Society (72 units)

In addition to the 48-unit core:

REQUIRED COURSES		UNITS
ENST 370	Marine and Coastal Environmental Policy	4
ENST 485***	Role of the Environment in the Collapse of Human Societies	4
MOR 466	Business and Environmental Sustainability	4

FOUR OF THE FOLLOWING ELECTIVE COURSES		UNITS
BISC 427	The Global Environment	4
ENST 445	Earth Climate: Past, Present, and Future	4
ENST 485***	Role of the Environment in the Collapse of Human Societies	4
GEOG 255	American Environmentalism	4
GEOG 360	Environmental Disasters	4
GEOL 450L	Geosystems	4
GEOL 470L	Environmental Hydrogeology	4
IR 422	Ecological Security and Global Politics	4
POSC 436	Environmental Politics	4
PPD 461	Sustainable Communities, Policy and Planning	4

Concentration in Oceans, Life and People (72 units)

In addition to the 48-unit core:

TWO OF THE FOLLOWING COURSES		UNITS
BISC 427	The Global Environment	4
ENST 370	Marine and Coastal Environmental Policy	4
ENST 480**	Integrated Ecosystem Management in Micronesia	4

FOUR OF THE FOLLOWING ELECTIVE COURSES		UNITS
BISC 315L	Introduction to Ecology	4
BISC 320L	Molecular Biology	4
BISC 447L	Island Biogeography and Field Ecology	4
BISC 456L	Conservation Genetics	4
BISC 469L	Marine Biology	4
ENST 480**	Integrated Ecosystem Management in Micronesia	4
ENST 485	Role of the Environment in the Collapse of Human Societies	4
GEOL 320L	Surficial Processes and Stratigraphic Systems	4
GEOL 412	Oceans, Climate, and the Environment	4
GEOL 450L	Geosystems	4
GEOL 470L	Environmental Hydrogeology	4

Concentration in Climate, Earth and Environment (72 units)

In addition to the 48-unit core:

TWO OF THE FOLLOWING COURSES		UNITS
ENST 445	Earth Climate: Past, Present, and Future	4
GEOL 470L	Environmental Hydrogeology	4
ENST 480**	Integrated Ecosystem Management in Micronesia	4

REQUIRED COURSES		UNITS
MATH 126	Calculus II	4
PHYS 151L	Fundamentals of Physics I: Mechanics and Thermodynamics	4

TWO OF THE FOLLOWING ELECTIVE COURSES		UNITS
BISC 427	The Global Environment	4
ENST 480**	Integrated Ecosystem Management in Micronesia	4
ENST 485	Role of the Environment in the Collapse of Human Societies	4
GEOL 315L	Minerals and Earth Systems	4
GEOL 412	Oceans, Climate and the Environment	4
GEOL 425L	Data Analysis in the Earth and Environmental Sciences	4
GEOL 450L	Geosystems	4

Concentration in Environmental Public Policy (72 Units)

In addition to the 48-unit core:

REQUIRED COURSES		UNITS
PPD 420	Environmental Impact Assessment	4
PPD 461	Sustainable Communities, Policy and Planning	4

FOUR OF THE FOLLOWING ELECTIVE COURSES		UNITS
PPD 314	Public Policy and Law	4
PPD 315	Analytic Foundations for Public Policy	4
PPD 353	Introduction to Philanthropy and Grant-writing	4

PPD 382	International Development	4
PPD 410	Comparative Urban Development	4
PPD 427L	Geographic Information Systems and Planning Applications	4
PPD 478	Social Innovations	4

**MATH 118x is not available as an alternative to MATH 125 for the concentration in Climate, Earth, and the Environment since this concentration requires MATH 125 and MATH 126. MATH 125 has a prerequisite of either the math placement exam or MATH 108. MATH 114 is a prerequisite for PSYC 274L.*

***ENST 298L is a corequisite for ENST 480. ENST 480 cannot be double-counted for B.S. ENVS degree credit.*

****ENST 485 cannot be double-counted for B.S. ENVS degree credit.*

Bachelor of Arts in Environmental Science and Health (52 units)

REQUIRED COURSES		UNITS
BISC 120L	General Biology: Organismal Biology and Evolution, and	4
BISC 220L	General Biology: Cell Biology and Physiology, or	4
BISC 121L	Advanced General Biology: Organismal Biology and Evolution, and	4
BISC 221L	Advanced General Biology: Cell Biology and Physiology	4
CHEM 105aLbL	General Chemistry, or	4-4
CHEM 115aLbL	Advanced General Chemistry	4-4
ENST 320ab*	Water and Soil Sustainability: Energy and Air Sustainability	4-4
ENST 387	Economics for Natural Resources and the Environment	4
ENST 495	Senior Seminar in Environmental Studies	4
HP 340L	Health Behavior Statistical Methods	4
HP 408	Environmental Health in the Community	4
IR 323	Politics of Global Environment	4
MATH 125*	Calculus I	4
PHYS 135aL	Physics for the Life Sciences, or	4
PHYS 151L	Fundamentals of Physics I: Mechanics and Thermodynamics	4

**Prerequisite or recommended preparation*

Bachelor of Science in Environmental Science and Health (72 units)

REQUIRED COURSES		UNITS
BISC 120L	General Biology: Organismal Biology and Evolution, and	4
BISC 220L	General Biology: Cell Biology and Physiology, or	4
BISC 121L	Advanced General Biology: Organismal Biology and Evolution, and	4
BISC 221L	Advanced General Biology: Cell Biology and Physiology	4
BISC 320L	Molecular Biology	4

BISC 330L	Biochemistry	4
CHEM 105aLbL	General Chemistry, or	
CHEM 115aLbL	Advanced General Chemistry	4-4
CHEM 322aBL	Organic Chemistry, or	
CHEM 325aBL	Organic Chemistry	4-4
ENST 320ab*	Water and Soil Sustainability; Energy and Air Sustainability	4-4
ENST 387	Economics for Natural Resources and the Environment	4
ENST 495	Senior Seminar in Environmental Studies	4
HP 340L	Health Behavior Statistical Methods	4
HP 408	Environmental Health in the Community	4
IR 323	Politics of Global Environment	4
MATH 125*	Calculus I	4
PHYS 135aBL	Physics for the Life Sciences, or	
PHYS 151L	Fundamentals of Physics I: Mechanics and Thermodynamics, and	4
PHYS 152L*	Fundamentals of Physics II: Electricity and Magnetism	4

*Prerequisite or recommended preparation

Progressive Degree Program in Environmental Studies

This progressive degree program allows superior USC undergraduates completing a bachelor's degree in a related natural science or environmental policy area to also complete a master's degree in environmental studies in as little as five years. An overall GPA of 3.2 or higher in all courses taken at USC is preferred. A 3.2 GPA does not guarantee acceptance. For more information about progressive degrees, see page 86xx.

Requirements for the Minor in Environmental Studies

REQUIRED CORE COURSES		UNITS
ENST 100	Introduction to Environmental Studies	4
ENST 320ab	Water and Soil Sustainability; Energy and Air Sustainability	4-4
TWO ELECTIVE SOCIAL SCIENCES COURSES CHOSEN FROM		UNITS
ENST 370	Marine and Coastal Environmental Policy	4
ENST 387x	Economics for Natural Resources and the Environment	4
IR 323	Politics of Global Environment	4
MOR 466	Business and Environmental Sustainability	4
ONE ELECTIVE COURSE CHOSEN FROM		UNITS
BISC 103Lx	General Biology for the Environment and Life	4
CHEM 103Lx	General Chemistry for the Environment and Life	4
GEOL 160L*	Introduction to Geosystems	4

Total units: 24

*ENST 100 is a corequisite for GEOL 160L.

Graduate Degrees

Master of Arts in Environmental Studies

The master's degree program in environmental studies focuses on issues and problems concerning public policy. A main goal of the graduate program is to educate students who already have a good grounding in the natural sciences about central theories, concepts and principles in public policy. A minimum of 41 units is required to receive an M.A. in environmental studies.

All students have a common point of entry into the graduate program. ENST 500 Introduction to Environmental Studies is broad and interdisciplinary. It provides students with an introduction to the field and to the different concentrations in the program. POSC 546 Seminar in Environmental Policy represents the second required core course. It offers students an overview of environmental politics, policy and regulations. Environmental science courses — ENST 501, ENST 502, ENST 503 and ENST 504 — expose students to critical scientific principles, concepts and issues related to pollution control, remediation and ecology. Students must also obtain a background in statistics and economics by taking ENST 510 Statistics for Environmental Analysis (or an equivalent course in the social sciences) and ECON 487 Resource and Environmental Economics. Finally, all students must complete the capstone course, ENST 595 Graduate Seminar in Environmental Studies.

Students who enroll in the master's degree program must pursue one of three concentrations: global environmental issues and development; law, policy and management; and environmental planning and analysis. Each one differs in professional training and educational focus and, perhaps most importantly, exposes students to fields and areas of knowledge that are closely and critically connected to today's most vexing environmental policy problems.

The concentration in global environmental issues and development introduces students to the social, political and economic dynamics that underlie regional and global environmental problems and seeks to unravel the complex interrelationships between political economy, population growth and development in the Pacific Rim and elsewhere in the world.

The concentration in law, policy and management is intended for those who wish to work (or already work) in government agencies, private companies and non-profit organizations (e.g., environmental groups). Students learn about the interconnections that exist between law, public policymaking, management (i.e., the administration of human and financial resources) and environmental issues.

The third concentration, environmental planning and analysis, is for students who wish to study technical matters related to land use planning and analysis. This concentration seeks to train students who wish to work (or who are already working) for planning departments, planning commissions and consulting firms.

A master's thesis is not required for the M.A. degree.

Required Courses and Concentrations

A minimum of 41 units is required. All courses are four units unless otherwise noted.

CORE COURSES (14 UNITS):

UNITS	
Core introductory course:	
ENST 500	Introduction to Environmental Studies
	4

ENVIRONMENTAL SCIENCE

UNITS	
ENST 501*	Environmental Science I
	2
ENST 503	Environmental Science II
	2
ENST 502	Environmental Science Seminar I
	1
ENST 504	Environmental Science Seminar II
	1
ENST 595	Graduate Seminar in Environmental Studies
	4

Environmental regulation and policy course:

POSC 546	Seminar in Environmental Policy	4
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*ENST 502 and 504 are corequisites for ENST 501 and 503, respectively, and ENST 501 is a prerequisite for ENST 503.

SKILLS COURSES (8 UNITS):

UNITS	
Natural resource economics course:	
ECON 487	Resource and Environmental Economics
	4

Statistics course: Students select one of the following:

ENST 510	Statistics for Environmental Analysis	4
GEOG 592	Quantitative Methods in Geography	4
IR 514	Multivariate Analysis	4
POSC 500	Methods of Political Science	4
POSC 600	Seminar in Advanced Research Methods	4
SOCI 521	Quantitative Methods and Statistics	4

Admission Requirements

Students who wish to enter the Master of Arts program in environmental studies are expected to have a GPA of at least 3.0 (A = 4.0). Students with a baccalaureate degree in any major will be admitted into the program as long as they have completed a year of biology, a year of chemistry, a course in earth sciences and a course in each of the following areas: a course in either earth, life, or physical sciences or engineering; a course in statistics (or calculus); and an introductory human environment, social ecology or environmental studies course in the social sciences. It is recommended that students take a science course in ecology and a course in economics at the undergraduate level prior to applying for admission. The director of the Environmental Studies Program will consider relevant course work and work experience as a possible substitute for the required and recommended course work.

Selection Criteria

Selection for graduate study is based on letters of reference, the student's previous academic record, the Graduate Record Examinations and a statement of purpose for graduate study.

Application Procedure

Applicants should contact the Environmental Studies Program office for an admission package. All applicants

should return their applications by March 1 for full consideration. The following components of the application are required: (1) a completed USC Application for Admission to Graduate Studies, (2) official transcripts of all undergraduate and graduate course work taken to date, (3) the results of the General Test of the GRE or notification of when it will be taken and that a request has been made to send the results to USC and (4) at least three letters of recommendation from persons directly familiar with the student's academic work and potential for successful graduate study.

Advisement

Advisement for the graduate program in environmental studies is viewed as an ongoing process. Before entering graduate school and during the first months of graduate school, each student should work with the director of the Environmental Studies Program on devising a plan for completing his or her course work.

Degree Requirements

The master's degree in environmental studies is under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue (page 97xx) for general regulations. All courses applied toward the degree must be courses accepted by the Graduate School.

Master of Science, Environmental Risk Analysis

The focus of the M.S., Environmental Risk Analysis degree is on advanced training for students with an existing science background. Students will enter the M.S. program with a B.S. degree in a core natural science field or in engineering, environmental science and certain fields of geography. Students take a core curriculum in science, engineering and finance, which is supplemented by important tools courses in risk assessment, statistics and computer modeling. Students learn about the basics of environmental science in a two-semester combination of courses and seminars (ENST 501, ENST 502, ENST 503, ENST 504). An advanced environmental science seminar (ENST 505ab) is offered in a two-semester sequence and ties together science, technology and finance with risk assessment and policy. The first semester of the course is devoted to analyzing case studies taken from business, industry and government. During the second semester students work on a project that employs the tools they have acquired in linking science, policy, technology and finance.

A master's thesis is not required for the M.S. degree. The M.S. degree in environmental risk analysis will give students the quantitative skills needed to understand and assess environmental risks and to use that information in business, industry, government and society.

Required Courses

A minimum of 48 units is required.

ENVIRONMENTAL RISK ANALYSIS		UNITS
ENST 530	Environmental Risk Analysis	4

ENVIRONMENTAL SCIENCE		UNITS
ENST 501*	Environmental Science I	2
ENST 503	Environmental Science II	2
ENST 502	Environmental Science Seminar I	1
ENST 504	Environmental Science Seminar II	1
ENST 505ab	Advanced Environmental Science Seminar	2-2
*ENST 502 and 504 are corequisites for ENST 501 and 503, respectively, and ENST 501 is a prerequisite for ENST 503.		

NATURAL SCIENCE

One graduate-level science course from outside undergraduate major and two graduate-level science courses

FINANCE		UNITS
GSBA 510	Accounting Concepts and Financing Reporting	3
GSBA 543	Managerial Perspectives, or	
MOR 569	Negotiation and Deal-Making	3
GSBA 548	Corporate Finance	3

TECHNICAL SKILLS

		UNITS
ENST 510	Statistics for Environmental Analysis	4
One modeling course		
Two technology/engineering courses		

Admission Requirements

Students who wish to enter the Master of Science program in environmental risk analysis are expected to have a GPA of at least 3.0 (A = 4.0). Students with a baccalaureate degree in the natural sciences, mathematics, environmental science, geography and engineering will be admitted into the program. It is recommended that students have completed an introductory human environment, social ecology or environmental studies course in the social sciences as well as a course in economics and/or environmental policy. The director of the Environmental Studies Program will consider relevant course work and work experience as a possible substitute for the required and recommended course work.

Selection Criteria

Selection for graduate study is based on letters of reference, the student's previous academic record, the Graduate Record Examinations and a statement of purpose of graduate study.

Application Procedure

Applicants should contact the Environmental Studies Program office for an admission package. All applicants should return their applications by March 1 for full consideration. The following components of the application are required: (1) a completed USC Application for Admission to Graduate Studies; (2) official transcripts of all undergraduate and graduate course work taken to date; (3) the results of the General Test of the GRE or notification of when it will be taken and that a request has been made to send the results to USC; and (4) at least three letters of recommendation from persons directly familiar with the student's academic work and potential for successful graduate study.

Advisement

Advisement for the graduate program in environmental studies is viewed as an ongoing process. Before entering graduate school and during the first months of graduate school, each student should work with the director of the Environmental Studies Program on devising a plan for completing his or her course work.

Degree Requirements

The master's degree in environmental risk analysis is under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue (page 97xx) for general regulations. All courses applied toward the degree must be courses accepted by the Graduate School.

Courses of Instruction

ENVIRONMENTAL STUDIES (ENST)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

ENST 100 Introduction to Environmental Studies (4, FaSp) Gateway to the majors and minors in Environmental Studies. Provides students with an overview of how government agencies and societal institutions address (or fail to address) the interrelated social and scientific aspects of environmental problems and policies.

ENST 150xg Environmental Issues in Society (4, Fa) Exploration of the major social, political, economic, religious, and philosophical disagreements that exist between scholars, leaders, and citizens concerning today's most serious environmental issues and problems. Not available for major or minor credit to environmental studies majors and minors. *Concurrent enrollment:* WRIT 140.

ENST 201 Introduction to Applied Environmental Science and Engineering (4) (Enroll in ENE 201)

ENST 255 American Environmentalism (4) (Enroll in GEOG 255)

ENST 260Lg Natural Hazards (4) (Enroll in GEOG 260Lg)

ENST 270 Introduction to Environmental Law and Politics (4, Sp) (Enroll in POSC 270)

ENST 298L Introduction to Scientific Diving (2, Sp) Extensive academic preparation in the physics, physiology, safety, and methodology for in-water scientific diving. Laboratory, 2 hours. *Recommended preparation:* Background in natural science and/or environmental studies is strongly recommended.

ENST 320ab Water and Soil Sustainability; Energy and Air Sustainability (a: 4, Fa; b: 4, Sp) Overview of issues related to water and soil sustainability including science, policy and business aspects. (ENST 320a: Duplicates credit in former ENST 420.) *Recommended preparation:* ENST 100. (ENST 320b: Duplicates credit in former ENST 430.)

ENST 323 Politics of Global Environment (4) (Enroll in IR 323)

ENST 345 Conservation of Natural Resources (4) (Enroll in GEOG 345)

ENST 347 Environmental Law (4) (Enroll in POSC 347)

ENST 360 Environmental Disasters (4) (Enroll in GEOG 360)

ENST 370 Marine and Coastal Environmental Policy (4, Sp) Survey of major environmental policies both international and domestic as they relate to fisheries, shipping, pollution, seaports and coastal management. *Recommended preparation:* ENST 100, ENST 387.

ENST 387 Economics for Natural Resources and the Environment (4, Fa) An introduction to the economic tools and issues that affect natural resource use and environmental management.

ENST 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

ENST 396 Directed Governmental and Political Leadership Internship (2-8, max 8) (Enroll in POSC 395)

ENST 400 Environmental Engineering Principles (3) (Enroll in ENE 400)

ENST 422 Ecological Security and Global Politics (4) (Enroll in IR 422)

ENST 427 The Global Environment (4, Sp) (Enroll in BISC 427)

ENST 436 Environmental Politics (4) (Enroll in POSC 436)

ENST 440 Environmental Risk Assessment (4, Sp) Assesses various potential environmental risks and examines how science, government, business, and industry measure and prepare for environmental risks. *Recommended preparation:* ENST 100.

ENST 445 Earth Climate: Past, Present, and Future (4, Fa) Examination of the tools used to reconstruct past climate change and a thorough discussion of past climate changes on earth with an emphasis on the recent past. *Prerequisite:* MATH 118x or MATH 125 and ENST 320b; *recommended preparation:* any introductory GEOL course.

ENST 456L Conservation Genetics (4, Sp) (Enroll in BISC 456L)

ENST 466 Business and Environmental Sustainability (4) (Enroll in MOR 466)

ENST 470 Environmental Hydrogeology (4, FaSpSm) (Enroll in GEOL 470L)

ENST 480 Integrated Ecosystem Management in Micronesia (4, SpSm) Field studies in ecosystem management tools used to investigate complex environmental problems in Micronesia. Historical, cultural, and scientific topics, direct observations of biological, physical, and chemical conditions. *Corequisite:* ENST 298.

ENST 485 Role of the Environment in the Collapse of Human Societies (4, Sm) Field studies in the roles of environmental problems in the collapse of ancient civilizations and analogous problems facing contemporary populations in those same places. *Recommended preparation:* ENST 100.

ENST 487 Resource and Environmental Economics (4) (Enroll in ECON 487)

ENST 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

ENST 495 Senior Seminar in Environmental Studies (4, Sp) Students form multidisciplinary teams and are asked to study and resolve a major environmental problem facing a particular region or target population.

ENST 499 Special Topics (2-4, max 8) Selected topics dealing with environmental issues and problems.

ENST 500 Introduction to Environmental Studies (4, Fa) This course introduces students to the major environmental issues and problems society faces today. Business, industry, and government actions concerning these issues and problems are examined.

ENST 501 Environmental Science I (2, Fa) Exposes students to critical scientific principles, concepts, and issues related to pollution control, remediation, and ecology. *Corequisite:* ENST 502.

ENST 502 Environmental Science Seminar I (1, Fa) A series of biweekly guest lectures on critical scientific principles, concepts, and issues related to pollution control, remediation, and ecology. *Prerequisite:* ENST 501; *corequisite:* ENST 504.

ENST 503 Environmental Science II (2, Sp) A continuation of ENST 501. Exposes students to critical scientific principles, concepts, and issues related to pollution control, remediation, and ecology. *Prerequisite:* ENST 501; *corequisite:* ENST 504.

ENST 504 Environmental Science Seminar II (1, Sp) A continuation of ENST 502. A series of biweekly guest lectures on critical scientific principles, concepts, and issues related to pollution control, remediation, and ecology.

ENST 505ab Advanced Environmental Science Seminar (2-2, FaSp) Ties together science, technology, and finance with risk assessment and policy.

ENST 510 Statistics for Environmental Analysis (4) This course introduces graduate students to the various quantitative techniques and methodological approaches used in pollution control, natural resources management, and environmental protection.

ENST 520 Environmental Law and Policy (4, Sp) Introduces students to the central issues, concepts, and theories in environmental law and policy and analyzes present environmental laws and regulations.

ENST 530 Environmental Risk Analysis (4, Fa) Analyzes various potential environmental risks and examines how science, government, and business measure and prepare for environmental risks.

ENST 536 The Landscape Planning Process (3) (Enroll in ARCH 536)

ENST 540 California Coastal Zone Science and Policy (4, Sp) Science and policy issues used to characterize and manage California coastal resources. Key issues include: coastal pollution, public health, ecosystem management, and marine reserves. *Recommended preparation:* ENST 500.

ENST 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

ENST 593 Practicum in Teaching the Liberal Arts (2, FaSp) (Enroll in MDA 593)

ENST 594abz Master's Thesis (2-2-0) Credit on acceptance of thesis. Graded IP/CR/NC.

ENST 595 Graduate Seminar in Environmental Studies (4, Sp) Addresses the obstacles to environmental policymaking and management by examining the interrelationships between science, technology, and social science. *Recommended preparation:* ENST 500, ENST 501, ENST 502, ENST 503, ENST 504.

ENST 599 Special Topics (2-4, max 8) Subjects specifically relevant to an environmental studies field, sometimes conducted as intensive short courses.

French and Italian

Taper Hall of Humanities 155

(213) 740-3700

FAX: (213) 746-7297

Email: french@dornsife.usc.edu

dornsife.usc.edu/fren-ital

Chair: Natania Meeker, Ph.D.

Faculty

Marion Frances Chevalier Professor of French: Peggy Kamuf, Ph.D.*

Professor: Margaret F. Rosenthal, Ph.D.*

Associate Professors: Natania Meeker, Ph.D.; Panivong Norindr, Ph.D.; Antonia Szabari, Ph.D.

Assistant Professors: Olivia Harrison, Ph.D.; Edwin Hill, Ph.D.

Professor of the Practice of French: Alain Borer, Ph.D.

Professor (Teaching) of Italian: Francesca Italiano, Ph.D.

Associate Professors (Teaching) of French: Carol A. Hofmann, Ph.D.; Béatrice Mousli Bennett, Ph.D., Chevalier de l'Ordre des Palmes Academiques

Assistant Professors (Teaching) of French: Colin Keaveney, Ph.D.; Julie Nack Ngue, Ph.D.

Assistant Professors (Teaching) of Italian: Alessio A. Filippi, Ph.D.; Antonio Idini, Ph.D.; Francesca Leardini, Ph.D.

Master Lecturer of French: Atiyeh Doreen Showrai, M.A.

Senior Lecturers of French: Nathalie C. Burle, Ed.D.; Julia Chamberlain, Ph.D.

Lecturer: Paulette Chandler, Ph.D.

Emeritus Professors: Marie-Florine Bruneau, Ph.D.; Albert Sonnenfeld, Ph.D., Chevalier de l'Ordre des Palmes Academiques

Emeritus Associate Professor: Arthur E. Babcock, Ph.D.

Associated Faculty

Professors: Elinor Accampo, Ph.D. (*History*); Joseph Dane, Ph.D. (*English*); Eunice Howe, Ph.D. (*Art History*)

Associate Professor: David Rollo, Ph.D. (*English*)

*Recipient of university-wide or school teaching award.

Undergraduate Programs

The Department of French and Italian offers majors and minors in both French and Italian. The study of French or Italian involves the mastery of the languages and their literary and cultural expressions in fiction, non-fiction, dramatic, cinematic and poetic texts, as well as the

study of social and political institutions within the context of intellectual history.

The department offers a variety of classes in French and Italian, as well as some courses with readings and discussion in English to satisfy diverse needs. Topics range broadly from the study of a single author to a literary genre; from current events to cinema; from gender studies to literary criticism.

Courses are kept small to allow for maximum interaction between students and professors. Students in both French and Italian work closely with their advisers to develop an appropriate course of study. This often involves study abroad. The department runs summer programs in Dijon, France and Rome, Italy; students also attend semester-long programs in Paris and Florence or Rome.

Graduate Programs

The M.A. and Ph.D. degrees in Comparative Studies in Literature and Culture (French and Francophone Studies) are offered through the Comparative Studies in Literature and Culture program, as described on page 307xx.

Undergraduate Degrees

Requirements for the Bachelor of Arts in French

For the lower division, FREN 250 French IV is required. The upper-division requirements include four core courses plus an additional five courses to be selected in consultation with the department adviser (no more than two of which may be in English) are required.

LOWER DIVISION		UNITS
FREN 250	French IV	4

UPPER DIVISION (9 COURSES)		UNITS
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Required core courses:

FREN 300	French Grammar and Composition	4
FREN 330	Writing about Literature	4
FREN 351	Early Modern French Cultures, or	
FREN 352	Modern French Cultures	4

Six upper-division French courses to be chosen from the following:

FREN 310	French Pronunciation and Conversation	4
FREN 320	French Cinema and French Society: 1900 to the Present	4
FREN 347	Race, Gender and Power in Francophone Literature	4
FREN 351*	Early Modern French Cultures	4
FREN 352*	Modern French Cultures	4
FREN 360	Business and Technical French	4
FREN 370	Equality and Difference Around the Enlightenment	4
FREN 375	Global Narratives of Illness and Disability	4
FREN 381	Studies in an Author	4, max 8
FREN 383	French Women Writers	4
FREN 385	Colloquium: French Literature	4, max 8

FREN 386	Autobiographical Writing	4
FREN 400	20th-Century France	4
FREN 410	<i>Actualités Françaises</i> (Paris semester only)	4
FREN 432	French Theatre (Paris semester only)	4
FREN 445	Studies in Gender and Feminism	4
FREN 446	Contemporary French Thought	4, max 8
FREN 447	Decadence	4
FREN 449	Studies in French Civilization (Paris semester only)	4
FREN 464	Colloquium: French Civilization	4, max 8
FREN 470	Readings in Medieval and Renaissance French Literature	4
FREN 471	Readings in 17th Century French Literature	4
FREN 472	Readings in 18th Century French Literature	4
FREN 473	Readings in 19th Century French Literature	4
FREN 474	Readings in 20th Century French Literature	4
FREN 490x	Directed Research	1-8, max 12
FREN 499	Special Topics	2-4, max 8

*Elective if not taken as a requirement.

French Minor Requirements

The department offers a French minor for students majoring in other disciplines. University requirements for minors are described on page 62xx of this catalogue. The department minor requirements are listed below. No more than one course conducted in English may be counted toward the minor.

LOWER DIVISION		UNITS
FREN 250	French IV	4

UPPER DIVISION (5 COURSES)		UNITS
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Required core courses:

FREN 300	French Grammar and Composition	4
FREN 330	Writing about Literature	4

Remaining three upper-division courses to be chosen from the following:

FREN 310*	French Pronunciation and Conversation	4
FREN 320	French Cinema and French Society: 1900 to the Present (in English)	4
FREN 347	Race, Gender and Power in Francophone Literature	4
FREN 351	Early Modern French Cultures	4
FREN 352	Modern French Cultures	4
FREN 360*	Business and Technical French	4
FREN 370	Equality and Difference around the Enlightenment	4
FREN 375	Global Narratives of Illness and Disability	4
FREN 381	Studies in an Author	4, max 8

FREN 383	French Women Writers	4
FREN 385	Colloquium: French Literature	4, max 8
FREN 386	Autobiographical Writing	4
FREN 400	20th-Century France	4
FREN 410	<i>Actualités Françaises</i> (Paris semester only)	4
FREN 432	French Theatre (Paris semester only)	4
FREN 445	Studies in Gender and Feminism	4
FREN 446	Contemporary French Thought (in English)	4, max 8
FREN 447	Decadence	4
FREN 449	Studies in French Civilization (Paris semester only)	4
FREN 464	Colloquium: French Civilization	4, max 8
FREN 470	Readings in Medieval and Renaissance French Literature	4
FREN 471	Readings in 17th Century French Literature	4
FREN 472	Readings in 18th Century French Literature	4
FREN 473	Readings in 19th Century French Literature	4
FREN 474	Readings in 20th Century French Literature	4
FREN 490x	Directed Research	1–8, max 12
FREN 499	Special Topics	2–4, max 8

*FREN 310 and 360 cannot both be taken for credit toward the minor in French. No more than one course conducted in English may be counted toward the minor.

Honors Program

The B.A. in French with Honors is available to students who have an overall GPA of 3.0 and a GPA of at least 3.5 in courses counted for major credit. To complete the honors program the student must complete three 400-level courses and write an honors thesis of 25–30 pages in French in one of the 400-level courses. The topic of the thesis must be agreed upon with the instructor.

French Honors Society: Pi Delta Phi Qualifications

Undergraduate students must have completed one semester of upper-division French with a minimum GPA of 3.0 in French and overall. Graduate students must be candidates for advanced degrees in French.

Sequence

A placement test is required of all students resuming French after high school courses in French.

Major Requirements for the Bachelor of Arts in Italian

REQUIRED COURSES — LOWER DIVISION		UNITS
Some or all of these courses may be waived by examination.		
ITAL 120	Italian I	4
ITAL 150	Italian II	4
ITAL 220	Italian III	4
ITAL 224	Italian Composition and Conversation	4

REQUIRED COURSES — UPPER DIVISION (6 COURSES)

No more than two courses conducted in English may be counted toward the major. A maximum of three courses may be completed outside the department.

Core course:		
ITAL 320	Writing About Italian Literature	4
Remaining 5 upper-division Italian courses to be chosen from the following:		
ITAL 330	Advanced Italian Composition and Style	4
ITAL 340	Italian Literature from Unification to Fascism (in English)	4
ITAL 345	Contemporary Italy (in English)	4
ITAL 350	Italian Renaissance Literature in Translation (in English)	4
ITAL 380	Italian Women Writers	4
ITAL 435	Ruins, Magic and Melancholy: Italian Literature 1600–1860	4
ITAL 440	Futurism and Fascism in Italy	4
ITAL 446	Italian Cinema and Society (in English)	4
ITAL 450	Dante	4
ITAL 461	Theatre, Spectacle, Drama and Performance in Italy	4
ITAL 462	The Novella Tradition: Fables and Stories	4
ITAL 470	Modern and Postmodern Italian Literature	4
ITAL 480	Perceptions of the Exotic in Italian Culture	4
ITAL 490x	Directed Research	1–8
ITAL 499	Special Topics	2–4, max 8

Italian Minor Requirements

The department offers an Italian minor for students majoring in other disciplines. No more than one class conducted in English may be counted toward the major.

LOWER DIVISION		UNITS
Some or all of these classes may be waived by examination.		
ITAL 120	Italian I	4
ITAL 150	Italian II	4
ITAL 220	Italian III	4
ITAL 224	Italian Composition and Conversation	4

UPPER DIVISION (4 COURSES)

Required core course:		
ITAL 320	Writing About Italian Literature (or equivalent)	4
Plus 3 upper-division courses to be chosen from the following:		
ITAL 330	Advanced Italian Composition and Style	4
ITAL 340	Italian Literature from Unification to Fascism (in English)	4
ITAL 345	Contemporary Italy (in English)	4
ITAL 350	Italian Renaissance Literature in Translation (in English)	4

ITAL 380	Italian Women Writers	4
ITAL 435	Ruins, Magic and Melancholy: Italian Literature 1600–1860	4
ITAL 440	Futurism and Fascism in Italy	4
ITAL 446	Italian Cinema and Society (in English)	4
ITAL 450	Dante	4
ITAL 461	Theatre, Spectacle, Drama and Performance in Italy	4
ITAL 462	The Novella Tradition: Fables and Stories	4
ITAL 470	Modern and Postmodern Italian Literature	4
ITAL 480	Perceptions of the Exotic in Italian Culture	4
ITAL 490x	Directed Research	1–8
ITAL 499	Special Topics	2–4, max 8

Courses of Instruction

FRENCH AND ITALIAN

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

FRENCH (FREN)

FREN 020x Course in Reading French (2, FaSpSm)

For graduate students who wish help in meeting the French reading requirement for the Ph.D. degree. Synoptic presentation of French grammar. Emphasis on development of reading skills. Not available for degree credit. Graded CR/NC.

FREN 120 French I (4, FaSpSm) Introduction to current French. Oral practice, listening and reading comprehension; grammar necessary for simple spoken and written expression. *Prerequisite:* No previous experience or appropriate placement score.

FREN 150 French II (4, FaSpSm) Continuation of FREN 120. *Prerequisite:* FREN 120 or appropriate placement score.

FREN 220 French III (4, FaSpSm) Continuation of FREN 150. Review of structural patterns of French; selected cultural and literary readings; conversation and composition. *Prerequisite:* FREN 150 or appropriate placement score.

FREN 235x Intermediate Conversational French: Culture, Society, and Communication (2, FaSp)

Designed for non-majors/minors interested in maintaining and developing French language competency. Builds vocabulary, ease of communication, and cultural knowledge through discussion of contemporary topics. Graded CR/NC. Not available for credit to French majors. Not open to French majors. *Prerequisite:* FREN 220.

FREN 236x Professional Communication in French (2, FaSp) Professional communication skills and cultural competency as preparation for working in an international environment. Not available for major credit to French majors or minors. *Prerequisite:* FREN 220.

FREN 250 French IV (4, FaSpSm) Introduction to French literature through the study of texts and audio-visuals organized around a central theme; develops close-reading techniques and discursive skills; reviews French grammar. *Recommended preparation:* FREN 220 or appropriate placement score.

FREN 300 French Grammar and Composition (4, FaSp) Grammatical structure and vocabulary building with practical application to written composition. Normally follows FREN 250. *Recommended preparation:* FREN 220.

FREN 310 French Pronunciation and Conversation (4, FaSp) Practice in sustained conversation. Emphasis on spoken sentence patterns. Normally follows FREN 250. *Recommended preparation:* FREN 220.

FREN 320 French Cinema and French Society: 1900 to the Present (4) Film-making in France from the earliest experiments to current trends. Emphasis on the political, social, historical context of French films. Taught in English. Reading knowledge of French recommended.

FREN 330 Writing about Literature (4, FaSp) Critical reading of literary texts; comprehensive analysis of difficult grammatical structures and stylistics; advanced composition. *Recommended preparation:* FREN 300.

FREN 347 Race, Gender and Power in Francophone Literature (4, FaSp) Study of post-colonialism as a ferment for literary creation in the literature of French expression from Africa, the Caribbean and Canada. Conducted in French. *Recommended preparation:* FREN 330.

FREN 351 Early Modern French Cultures (4) Study of France's cultural development to the end of the Ancien Régime. Special attention to events, trends and ideas that helped shape today's France. Conducted in French. (Duplicates credit in former FREN 346.) *Recommended preparation:* FREN 300 or FREN 310.

FREN 352 Modern French Cultures (4) Study of the major intellectual, artistic and sociopolitical trends that have shaped French culture from the revolution to the present. Conducted in French. (Duplicates credit in former FREN 346.) *Recommended preparation:* FREN 300 or FREN 310.

FREN 360 Business and Technical French (4) Specific vocabulary and formulae used in international commerce. Attention given to developing vocabulary and standard forms appropriate to individual career objectives. *Recommended preparation:* FREN 330.

FREN 370m Equality and Difference Around the Enlightenment (4) 18th- and 20th-century debates around the idea of equality and the notion of difference. Relevance of the Enlightenment to contemporary discussions of identity, citizenship, and human rights.

FREN 373 Remembering Loss, Writing Memory (4, FaSp) An exploration into how genocides and episodes of mass violence have been thought about, remembered and expressed in France and the Francophone world. *Recommended preparation:* FREN 330.

FREN 375m Global Narratives of Illness and Disability (4, Fa) Study of difference as represented through French, Francophone and related narratives of disability and illness, with attention to race and gender. *Recommended preparation:* FREN 330.

FREN 381 Studies in an Author (4, max 8) Close readings in the works of a single influential French or francophone author. Focused study of style, creative developments, historical context. In French. *Corequisite:* FREN 330.

FREN 382 Paris Avant-Gardes (4) Exploration of experimental artistic collaborations between poets, novelists, art critics and artists of the Paris Avant-gardes in 19th and 20th century. Taught in French. Paris Semester. *Prerequisite:* FREN 300; *corequisite:* FREN 330.

FREN 383 French Women Writers (4) Major figures and their role in French society and contribution to literature. Conducted in French. *Recommended preparation:* FREN 330.

FREN 385 Colloquium: French Literature (4, max 8) Selected topics from literature of the French-speaking community. Conducted in French. *Recommended preparation:* FREN 330.

FREN 386 Autobiographical Writing (4) Explores the complexities and challenges involved in writing and reading the autobiographical discourse, both as genre and literary theme in French writing. In French. *Corequisite:* FREN 330.

FREN 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

FREN 400 20th-Century France (4) French culture since 1900; emphasis on major intellectual, sociopolitical, and artistic trends, including cinema and television. Conducted in French. *Recommended preparation:* FREN 330.

FREN 410 Actualités Françaises (4, Sp) Present day French life through readings in French periodicals and viewing of French films and art exhibits. Non-majors prepare assignments in English. Conducted in French. Spring semester in Paris only. *Recommended preparation:* FREN 330.

FREN 432 French Theatre (4, Sp) (Paris Semester only) A survey of French theatre from the 17th century to the present. Students read plays ranging from classical comedy and tragedy to modern movements. Live theatre performances will supplement class work. Taught in French. *Prerequisite:* FREN 330; *recommended preparation:* familiarity with French history since the Renaissance.

FREN 445 Studies in Gender and Feminism (4) Major feminist thinkers and writers seen in the perspective of the evolution of gender roles in France today. Conducted in French. *Recommended preparation:* FREN 330.

FREN 446 Contemporary French Thought (4, max 8) Introduction to important trends in recent French philosophy, political and social theory, psychoanalysis, ethnology, semiotics, and media studies. Readings in structuralism, post-structuralism, feminism, and deconstruction. Conducted in English.

FREN 447 Decadence (4) Decadence in French literature and thought from 1650 to the present. Close textual analysis of works by Colette, Huysmans, Rousseau, Töcqueville, and others.

FREN 448m France and Islam (4, FaSp) Historical and theoretical analyses of the complex history of Western perceptions of Islam, focusing on France. Taught in French. *Recommended preparation:* FREN 330 for French majors and minors and REL 137 for Religion majors and minors.

FREN 449 Studies in French Civilization (4, Sp) (Paris Semester only) An analysis of the prestige of Paris, past and present, based upon close examination of literary texts and graphic materials, and visits to sites and monuments. *Recommended preparation:* FREN 300.

FREN 464 Colloquium: French Civilization (4, max 8) Selected topics such as the press, educational institutions, French cinema today, and French colonial history. Conducted in French. *Recommended preparation:* FREN 351 or FREN 352.

FREN 470 Readings in Medieval and Renaissance French Literature (4) Study of modernized versions of major medieval and Renaissance texts. Conducted in French. *Recommended preparation:* FREN 330.

FREN 471 Readings in 17th Century French Literature (4) Close readings of texts by Descartes, Pascal, Corneille, Racine, Molière, La Fontaine, and others. Conducted in French. *Recommended preparation:* FREN 330.

FREN 472 Readings in 18th Century French Literature (4) Study of the major figures of the Enlightenment: Prevost, Montesquieu, Voltaire, Diderot, Rousseau, and others. Conducted in French. *Recommended preparation:* FREN 330.

FREN 473 Readings in 19th Century French Literature (4) Texts selected from the works of Balzac, Stendhal, Flaubert, Zola, Hugo, Musset, and Baudelaire, illustrating the century's major literary movements. Conducted in French. *Recommended preparation:* FREN 330.

FREN 474 Readings in 20th Century French Literature (4) Representative novels, plays and essays exemplifying such movements as Modernism, Surrealism, Existentialism, the Theatre of the Absurd, and Post-modernism. Conducted in French. *Recommended preparation:* FREN 330.

FREN 490x Directed Research (1–8, max 12) Individual research and readings. Not available for graduate credit.

FREN 499 Special Topics (2–4, max 8) Selected topics in French.

FREN 500 Rhétoriques des Arts I (4) Core seminar on the arts, especially writing, in French and Francophone traditions. Methodological emphasis. Texts by Paulhan, Baudelaire, and others. Topics will vary.

FREN 502 Raison et Déraison I (4) Core seminar on reason and unreason in literature and the arts in French and Francophone cultures. Methodological emphasis. Texts by Descartes, Foucault, and others. Topics will vary.

FREN 504 Studies in Francophone Literature and Thought (4) Topics in Francophone literature and intellectual history of Africa, Asia and the Americas. Emphasis on colonial history and political and aesthetic concerns.

FREN 511 Revolutions I (4) Core seminar on concept of revolution in French and Francophone cultures. Methodological emphasis. Texts by Rousseau, Marx, and others. Topics will vary.

FREN 530 Studies in a Genre (4) Studies one of the genres in French literature (including novel, poetry, drama, and essay) in any historical period or periods.

FREN 540 Studies in French Literature and Philosophy (4) Examines literary and philosophical works side by side in any historical period or periods in France.

FREN 550 Studies in Literature and Other Media (4) Survey-like review of the interaction between verbal and other artistic media such as print, music, dance, theater, and painting and the visual arts.

FREN 551 Revolutions II (4, max 8) Seminar on concept of revolution in French and Francophone cultures. Topics will vary.

FREN 552 Raison et Déraison II (4, max 8) Seminar on reason and unreason in literature and the arts and Francophone cultures. Topics will vary.

FREN 560 Rhétoriques des Arts II (4, max 8) Seminar on the arts in French and Francophone traditions. Topics will vary.

FREN 590 Directed Research (1–12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

FREN 593 Practicum in Teaching the Liberal Arts (2, FaSp) (Enroll in MDA 593)

FREN 600 Rhétoriques des Arts III (4, max 8) Seminar on the arts in French and Francophone traditions. Topics will vary.

FREN 601 Revolutions III (4, max 8) Seminar on concept of revolution in French and Francophone cultures. Topics will vary.

FREN 602 Raison et Déraison III (4, max 8) Seminar on reason and unreason in literature and the arts in French and Francophone cultures. Topics will vary.

FREN 603 Seminar on an Author (4) Examines the work of a significant French author along with its critical and theoretical assessments.

FREN 604 Topics in Contemporary French Thought (4) Examines French thought from 1960 to the present day.

FREN 695 Topics and/or Themes in French Literature (4, max 12)

FREN 696 Topics and/or Themes in Francophone Literature (4, max 12) Advanced seminar with varying focus on the Francophone literature and culture of West Africa, North Africa, the Caribbean, Quebec and Southeast Asia.

FREN 790 Research (1–12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

FREN 794abcdz Doctoral Dissertation(2-2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC.

ITALIAN (ITAL)

ITAL 020x Course in Reading Italian (2) For graduate students who wish help in meeting the Italian reading requirement for the Ph.D. degree. Synoptic presentation of Italian grammar. Emphasis on development of reading skills. Not available for degree credit. Graded CR/NC.

ITAL 120 Italian I (4, FaSpSm) Introduction to current Italian. Oral practice, hearing and reading comprehension; grammar necessary for simple spoken and written expression. Lecture, classroom drill, laboratory drill. *Prerequisite:* Italian placement exam.

ITAL 150 Italian II (4, FaSpSm) Continuation of Italian I. *Prerequisite:* ITAL 120 or Italian placement exam.

ITAL 220 Italian III (4, FaSpSm) Continuation of Italian II. Review of structure of the language, drill in aural and reading comprehension, practice in oral expression. *Prerequisite:* ITAL 150 or Italian placement exam.

ITAL 224 Italian Composition and Conversation (4, FaSpSm) Practice in composition and conversation; organized around a set of themes; develops close-reading techniques and discursive skills; reviews Italian grammar. *Prerequisite:* ITAL 220 or Italian placement exam.

ITAL 235x Intermediate Conversational Italian (2, FaSp) Designed for students interested in maintaining and developing Italian language competency. Builds and reinforces vocabulary, idioms, communication skills and knowledge of Italian cultural aspects through discussion of contemporary topics. Graded CR/NC. *Prerequisite:* ITAL 220.

ITAL 320 Writing About Italian Literature (4, FaSpSm) Critical reading of literary texts; comprehensive analysis of difficult grammatical structures and stylistics; advanced composition. *Prerequisite:* ITAL 224.

ITAL 330 Advanced Italian Composition and Style (4) Original composition in Italian; written translation of English material; analysis of stylistic techniques of contemporary Italian authors. (Duplicates credit in former ITAL 444.) *Recommended preparation:* ITAL 220.

ITAL 340 Italian Literature from Unification to Fascism (4, FaSp) Reading of standard English translations of selected novels by leading Italian writers (1861–1945).

ITAL 345 Contemporary Italy (4) Italian literature and arts in Italy following World War II. Conducted in English.

ITAL 350 Italian Renaissance Literature in Translation (4) Readings of major texts of Italian literature of the 15th and 16th centuries, including works by Petrarch, the Humanists, Lorenzo de Medici, Ariosto, Machiavelli, Castiglione, and Tasso.

ITAL 352 The Holocaust in Italian Fiction and Film (4, FaSp) The transformation of the Italian Jewish community before, during and after World War II, through an examination of modern novels, essays and films. Taught in English.

ITAL 380 Italian Women Writers (4) Selected poetry, prose, and drama by outstanding Italian women authors and their role in Italian society from the Middle Ages to 20th century. Taught in Italian. *Recommended preparation:* ITAL 320.

ITAL 390 Special Problems (1–4) Supervised, individual studies. No more than one registration permitted.

ITAL 430 Readings in Medieval and Renaissance Italian Literature (4) Introduction to principal works and movements of Italian literature from 1226 to 1600. *Recommended preparation:* ITAL 320.

ITAL 435 Ruins, Magic and Melancholy: Italian Literature 1600–1860 (4) Introduction to principal works and movements of Italian literature from 1600 to 1860. *Recommended preparation:* ITAL 320.

ITAL 440 Futurism and Fascism in Italy (4) Literature, theatre, visual arts, and politics, from the Futurist Avant-Garde through the reign of Mussolini. *Recommended preparation:* ITAL 320.

ITAL 446 Italian Cinema and Society (4) Survey of Italian cinema in its relation to social transformation, from the silent era to the present. Weekly screenings, lectures, and discussions. Conducted in English. (Duplicates credit in former ITAL 346.)

ITAL 450 Dante (4) Analysis of the *Divina Commedia* and other works.

ITAL 461 Theatre, Spectacle, Drama and Performance in Italy (4, FaSp) Italian dramatic literature from the earliest written documents to the present. Reading and close textual scrutiny of plays by major dramatists from the Renaissance to the present. *Recommended preparation:* ITAL 320.

ITAL 462 The Novella Tradition: Fables and Stories (4, FaSp) Reading and close textual scrutiny of major short stories from Boccaccio's *Decameron* to the present. *Recommended preparation:* ITAL 320.

ITAL 470 Modern and Postmodern Italian Literature (4, FaSp) Reading and close textual scrutiny of works of the 20th century from Verga's *I Malavoglia* to the present. *Recommended preparation:* ITAL 320.

ITAL 480 Perceptions of the Exotic in Italian Culture (4) The "exotic" as a cultural concept in Italian literature, popular genres, and film. Conducted in Italian. *Recommended preparation:* ITAL 320.

ITAL 490x Directed Research (1-8, max 12) Individual research and readings. Not available for graduate credit.

ITAL 499 Special Topics (2-4, max 8) Special topics in Italian literature, culture, and society. Conducted in Italian. *Prerequisite:* ITAL 224.

ITAL 590 Directed Research (1-12) Research leading to the master's degree in cognate fields. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

ITAL 593 Practicum in Teaching the Liberal Arts (2, FaSp) (Enroll in MDA 593)

Freshman Seminars

College Academic Services Building 200
(213) 740-2961

dornsife.usc.edu/fsem

Director: Richard Fliegel, Ph.D.

Freshman Seminars introduce freshmen to the larger academic world they are now entering. These small group seminars address topics of current interest in contemporary research and scholarship.

Freshmen earn two units of baccalaureate credit through participation in these weekly seminars. Active exploration of the life of the mind is emphasized through a variety of classroom activities and assignments.

To encourage the relaxed interchange of information and ideas, most seminars are graded credit/no credit. Each seminar is limited in enrollment to 18 freshmen.

Freshman Seminars encourage the natural development of the mentoring relationship between faculty and students. An early start on building these connections

enhances the opportunities for intellectual growth throughout the student's years at USC.

Freshman Seminars are offered for the fall and spring semesters in a variety of subjects. Individual topics are indicated by parenthetical titles in the *Schedule of Classes* (usc.edu/soc) under the FSEM designation or on the department's Website (usc.edu/fsem).

For further information, contact Richard Fliegel, Ph.D., (213) 740-2961, email: fliegel@usc.edu, or Marsha Chavarria-Winbush, (213) 740-2961, email: chavarria@usc.edu.

Courses of Instruction

FRESHMAN SEMINARS (FSEM)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

FSEM 100 Freshman Seminar (2, max 4, FaSp) A seven-to-eleven week course offered for incoming freshmen; limited to 18 students. Graded CR/NC. A combined maximum of 4 units of FSEM 100 and FSEM 101 may be applied to the degree.

FSEM 101 Freshman Seminar (2, max 4, FaSp) A seven-to-eleven week course offered for incoming freshmen; limited to 18 students. Letter graded. A combined maximum of 4 units of FSEM 100 and FSEM 101 may be applied to the degree.

FSEM 180 First Year College Seminar (2, max 4, FaSp) A thematic seminar for entering students in the USC Dornsife College of Letters, Arts and Sciences, exploring an area of academic study, research, or creative work. Graded CR/NC.

Gender Studies

Mark Taper Hall of Humanities 422

(213) 740-8286

FAX: (213) 740-6168

Email: gender@dornsife.usc.edu

Director: Alice Echols, Ph.D.*

Faculty

Barbra Streisand Professor of Contemporary Gender Studies: Alice Echols, Ph.D.* (*English and History*)

Professors: Lois Banner, Ph.D. (*History*); Joseph Boone, Ph.D. (*English*); Judith Halberstam, Ph.D.* (*American Studies*); Sharon Hays, Ph.D. (*Sociology*); Michael Messner, Ph.D. (*Sociology*); Sherry Marie Velasco, Ph.D. (*Spanish and Portuguese*)

Associate Professors: Sheila Briggs, Ph.D. (*Religion*); Ange-Marie Hancock, Ph.D. (*Political Science*); Karen L. Tongson, Ph.D. (*English*)

Gender Studies Advisory Board

Professors: Elinor Accampo, Ph.D. (*History*); Judith Bennett, Ph.D. (*History*); Warren Bennis, Ph.D. (*Business*); Lisa Bitel, Ph.D. (*History*); David Cruz, Ph.D.

(*Law*); Diane Ghirardo, Ph.D. (*Architecture*); Pierrette Hondagneu-Sotelo, Ph.D. (*Sociology*); Janet Hoskins, Ph.D. (*Anthropology*); Eunice Howe, Ph.D. (*Art History*); Peggy Kamuf, Ph.D. (*French and Italian*); Mark Kann, Ph.D. (*Political Science*); Nancy Lutkehaus, Ph.D. (*Anthropology*); Susan McCabe, Ph.D. (*English*); Rhacel Parrenas, Ph.D. (*Sociology*); Justin Pearlman, Ph.D. (*Office of the Vice Provost*); Azade-Ayşe Rorlich, Ph.D. (*History*); Eliz Sanasarian, Ph.D. (*Political Science*); Hilary Schor, Ph.D. (*English*); Ellen Seiter, Ph.D. (*Cinematic Arts*); David Sloane, Ph.D. (*Public Policy*); Melora Sundt, Ph.D. (*Education*); Ruth Wallach, MLS (*USC Libraries*); Holly Willis, Ph.D. (*Cinematic Arts*); Diane Winston, Ph.D. (*Journalism*)

Associate Professors: Marjorie Becker, Ph.D. (*History*); Bettine Birge, Ph.D. (*East Asian Languages and Cultures*); Kim Buchanan, LL.M., JSD (*Law*); Tracy Fullerton, Ph.D. (*Cinematic Arts*); Alice Gambrell, Ph.D. (*English*); Sharon Gillerman, Ph.D. (*Hebrew Union College*); Kara Keeling, Ph.D. (*Cinematic Arts*); Paul Lerner, Ph.D. (*History*); Tara McPherson, Ph.D. (*Cinematic Arts*); Lori Meeks, Ph.D. (*Religion*)

Assistant Professors: Michelle Gordon, Ph.D. (*English*); Megan Reid, Ph.D. (*Religion*); Diana Williams, Ph.D. (*History*)

Lecturer: M.G. Lord, Ph.D. (*Professional Writing*)

Administrative Associates: Susan Harris, Ph.D. (*Joint Educational Project*); Todd Henneman (*Center for Women and Men*); Brie Loskota (*Center for Religion and Civic Culture*)

*Recipient of a university-wide or college teaching award.

The Gender Studies Program explores, across disciplines and cultures, the changing roles, functions and images of women and men from feminist perspectives. The undergraduate major focuses on the evidence and argument about what the places of women and men are in culture and what they should be. Course offerings include interdisciplinary core courses, selected cross-listed classes in more than 20 departments and the upper-division community internship and senior seminar. Majors work with program faculty, in conjunction

with USC Dornsife College Advising, to develop a four-year program designed to meet their individual needs. The program also offers a minor and a graduate certificate for students majoring in other disciplines.

Requirements

Requirements for the Bachelor of Arts in Gender Studies

For the lower division, one of the following courses may be selected as the requirement: SWMS 210 Social Issues in Gender or SWMS 215 Gender Conflict in Cultural Contexts. For the upper division, 32 units of SWMS courses, including SWMS 301, SWMS 311 and SWMS 410, are required.

Honors Program Requirements

The Gender Studies Program offers a two-semester honors program, in which qualified students spend their first semester in an honors track in an upper-division seminar, usually SWMS 410 Senior Seminar. During the second semester, all honors students are required to take SWMS 492 Honors Thesis, in which each completes a thesis project on a topic of his or her choosing under faculty direction. Contact the departmental honors director for further information. To graduate with honors, department majors must have a minimum GPA of 3.5 in their major course work.

Gender Studies Minor Requirements

The program offers a minor for students specializing in other disciplines. Twenty units of course work are required for completion of the minor in gender studies: SWMS 210 or SWMS 215; SWMS 301; SWMS 410; and two additional 4-unit upper-division SWMS courses. Since many SWMS courses are cross-listed, the two elective upper-division courses must be from two different departments.

Graduate Certificate Program

Graduate students intending to concentrate in gender studies must be admitted to a USC graduate or professional program. While meeting the requirements for a departmental graduate degree, they may earn a certificate of competency in gender studies. To earn a certificate, students must take SWMS 560 and other courses from the SWMS list of graduate level courses, 500 and above, to a total of at least 12 units. No more than four units of directed research may be taken and those units must be taken as SWMS 590. Each academic department will determine the number of units completed which may be applied to the student's graduate degree in that department.

In addition to the completion of course requirements, students must include a focus on gender as part of their major department master's thesis, doctoral dissertation or law review note. Or they may take an oral examination on three research papers they have written within the areas of gender studies and on relevant graduate work pertaining to the field of gender studies. The oral exam will be administered by members of the Gender Studies faculty. A Gender Studies faculty member will be assigned as an adviser for each student. Gender Studies faculty will be responsible for judging the adequacy of the gender studies analysis in the student's thesis, dissertation or oral examination.

Courses of Instruction

GENDER STUDIES (SWMS)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

SWMS 140g Contemporary Moral and Social Issues (4) (Enroll in PHIL 140g)

SWMS 210gm Social Issues in Gender (4, FaSp) Multidisciplinary survey of gender assumptions in relation to sexuality, mental health, social and political relations, and artistic expression. *Concurrent enrollment:* WRIT 140.

SWMS 215g Gender Conflict in Cultural Contexts (4, Fa) Identification and examination of social and cultural conflicts through the lens of gender, and comparison of such conflicts across cultures, regions, and historical periods.

SWMS 225 Gender, Sex, and Science: A Gender Studies Approach (4, FaSp) Study of sex, gender in relation to science and social sciences; survey of scientific methods, approaches, current research; investigation of gender influences on scientific research.

SWMS 245gm Gender and Sexualities in American History (4) (Enroll in HIST 245gm)

SWMS 300 Women in Antiquity (4) (Enroll in CLAS 300)

SWMS 301m Introduction to Feminist Theory and the Women's and Men's Movements (4, FaSpSm) Theories of feminism; historical, social and cultural perspectives of the women's movement in America, Europe, and in developing countries; men's roles in the feminist movement.

SWMS 302 From Sappho to Stonewall: Lesbians in History (4, Sp) (Enroll in HIST 302)

SWMS 303 From Goddesses to Witches: Women in Premodern Europe (4) (Enroll in HIST 305)

SWMS 304xm Italian Renaissance Art: Old Masters and Old Mistresses (4) (Enroll in AHIS 304xm)

SWMS 305 Childhood, Birth and Reproduction (4) (Enroll in ANTH 305)

SWMS 307 Women in Medieval Europe, c. 1000-1500 (4, Fa) (Enroll in HIST 307)

SWMS 311 Gender Studies and the Community: Internship (4, FaSpSm) A combination of internships in the community and an intensive seminar on the relationship of the students in the academic community with the larger urban community of which it is a part.

SWMS 316 Gender and Global Issues (4) (Enroll in IR 316)

SWMS 320 Male and Female in Pacific Society (4) (Enroll in ANTH 320)

SWMS 321 Gender and Judaism (4) (Enroll in JS 321)

SWMS 324 Women in Medieval and Renaissance Europe (4) (Enroll in COLT 324)

SWMS 330m Culture, Gender and Politics in South Asia (4) (Enroll in ANTH 330)

SWMS 335 Gender, Religion, and Sexuality (4) (Enroll in REL 335)

SWMS 336 Health, Gender and Ethnicity (4, Sp) Cross-cultural notions of the body, health, and healing; historic and cultural variability of ideas of reproduction, birth, sexuality, mental illness, and disability.

SWMS 345 Men and Women in United States History from the 1920s to the Present (4) (Enroll in HIST 345)

SWMS 347 Race, Gender and Power in Francophone Literature (4) (Enroll in FREN 347)

SWMS 349 Women and the Law (4, Fa) Discussion of the relationship between women and the law in light of feminist jurisprudence, U.S. Supreme Court decisions, and cross-cultural perspectives.

SWMS 355 Transgender Studies (4, Sp) Analysis of transgender behaviors, from androgyny and transvestism to transexuality. Discussion of changing laws, representations, medical standards, and social attitudes towards transgender and intersex people.

SWMS 358 U.S. Gay and Lesbian History (4, Sp) Exploration of shifting social organization and cultural meanings of same-sex desire and cross-gender behaviors in the U.S., primarily during the 20th century.

SWMS 363m Race, Gender and Sexuality in Contemporary Art (4) (Enroll in AHIS 363m)

SWMS 366m Chicana and Latina Sociology (4) (Enroll in SOCI 366m)

SWMS 369 The Family in a Changing Society (4) (Enroll in SOCI 369)

SWMS 370 Family and Kinship in Cross-Cultural Perspective (4) (Enroll in ANTH 370)

SWMS 372 Human Sexuality (4) (Enroll in PSYC 372)

SWMS 374gm Women Writers in Europe and America (4) (Enroll in COLT 374gm)

SWMS 375 Women and Gender in China: Past and Present (4) (Enroll in EALC 375)

SWMS 377 The Image of the Journalist in Popular Culture (4) (Enroll in JOUR 375)

SWMS 378 Literature, Theory, Gender (4) (Enroll in COLT 377)

SWMS 380 Sex and Gender in Anthropological Perspective (4) (Enroll in ANTH 380)

SWMS 381 Sex, Power, and Politics (4) (Enroll in POSC 381)

SWMS 382 Political Theories and Social Reform (2 or 4) (Enroll in POSC 380)

SWMS 383 French Women Writers (4) (Enroll in FREN 383)

SWMS 384m Gender, Social Inequality, and Social Justice (4, Fa) Analysis of the most effective strategies and techniques for reducing prejudice against racial/ethnic minorities, women, gays and lesbians, and others subjected to stigma.

SWMS 385m Men and Masculinity (4) Interdisciplinary examination of social, personal meanings of masculinity; variety of male experience by social class, race, sexuality, and age; emerging masculinities of the future.

SWMS 390 Special Problems (1–4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

SWMS 395m Gender, Media and Communication (4) (Enroll in COMM 395m)

SWMS 402 Human Trafficking (4, FaSp) (Enroll in SOCI 402)

SWMS 410 Senior Seminar in Gender Studies (4, Fa) Study of a selected problem, period, or theme in the study of women and men in society by integrating perspectives from cross-cultural and interdisciplinary studies.

SWMS 412 Gender, Sexuality and Media (4, max 8) (Enroll in CTCS 412)

SWMS 415 Ecofeminism (4, Sp) Examination of the philosophy and politics of Ecofeminism. It will critique the ideologies that link the oppression of women to the exploitation of nature. *Recommended preparation:* SWMS 210 or SWMS 301.

SWMS 420 Woman, Nature, Culture: The Behavioral Ecology of Women (4, FaSp) Analysis of theoretical perspectives and empirical data from biology, psychology and anthropology that relate to women's physiology and behavior.

SWMS 425 Queer Los Angeles (4, Sp) Interdisciplinary study of queer Los Angeles through examination of histories, memoirs, essays, fiction, poetry, documentaries, narrative films, and local archives.

SWMS 426 Gender, Family and Society in Europe and the United States, 1500–Present (4) (Enroll in HIST 426)

SWMS 430 Gender and Sexuality in Korean Literature and Culture (4) (Enroll in EALC 430)

SWMS 434m Women and Aging: Psychological, Social and Political Implications (4, FaSpSm) (Enroll in GERO 435m)

SWMS 435m Women in Society (4) (Enroll in SOCI 435m)

SWMS 437m Sexuality and Society (4) (Enroll in SOCI 437m)

SWMS 440 Women's Literature in Germany I (4) (Enroll in GERM 440)

SWMS 442m Women's Spaces in History: "Hus-sies," "Harems," and "Housewives" (4) (Enroll in ARCH 442m)

SWMS 445 Studies in Gender and Feminism (4) (Enroll in FREN 445)

SWMS 455m Gender and Sport (4) Sport as an institutional locus for construction of gender relations; lives of female and male athletes; issues of sexuality, violence, racism, spectatorship, and media.

SWMS 456 Women in International Development (4) (Enroll in POSC 456)

SWMS 465 Gender in Media Industries and Products (4) (Enroll in COMM 465)

SWMS 467 Gender and the News Media (4) (Enroll in JOUR 467)

SWMS 469 Women in English Literature before 1800 (4) (Enroll in ENGL 469)

SWMS 470 Women in English and American Literature after 1800 (4) (Enroll in ENGL 470)

SWMS 476m Images of Women in Contemporary Culture (4) (Enroll in ENGL 476m)

SWMS 478m Sexual/Textual Diversity (4) (Enroll in ENGL 478m)

SWMS 490x Directed Research (1–8, max 12, FaSpSm) Independent research and readings. Not available for graduate credit.

SWMS 492 Honors Thesis (4, Sp) Writing of the honors thesis; for students in the Gender Studies Honors Program. Open only to gender studies majors. *Recommended preparation:* SWMS 410.

SWMS 499 Special Topics (2–4, max 8) Study of a selected problem, period, or theme through interdisciplinary approaches.

SWMS 504 Theories of Race, Class, and Gender (4) (Enroll in ENGL 504)

SWMS 505 Seminar in Feminist Theory and Art History (4, max 8) (Enroll in AHIS 505)

SWMS 507 Gender and International Relations (4, Irregular) (Enroll in IR 507)

SWMS 508 Ethics of Liberation Theology (4) (Enroll in REL 508)

SWMS 509 Culture, Gender, and Global Society (4) (Enroll in IR 509)

SWMS 516 Seminar: Feminist Theory and Communication (4, 2 years, Sp) (Enroll in COMM 516)

SWMS 544 Feminist Theory for Historians (4, Fa) (Enroll in HIST 544)

SWMS 546 Comparative History of Women and Gender in the West to 1800 (4, Fa) (Enroll in HIST 546)

SWMS 548 Fertility Control Policies (4) (Enroll in SOCI 548)

SWMS 550 Gender and Education in the Third World (3) (Enroll in EDPA 550)

SWMS 551 Studies in the History of Women, Gender and Sexuality (4, max 8) (Enroll in HIST 550)

SWMS 552 Sex and Gender in Society (4) (Enroll in SOCI 552)

SWMS 554 Women in Global Perspective (4) Women and immigration, employment, and household and family relations in the context of the global economy; women's social and political movements in diverse cultural contexts.

SWMS 556 Seminar on Women and the Family in China (4) (Enroll in EALC 556)

SWMS 560 Feminist Theory (4, FaSpSm) History of feminist theory and major perspectives of current feminist theory: liberal feminism, socialist/Marxist feminism, radical feminism, psychological feminism, spiritual feminism, and ecological feminism.

SWMS 575 The Ethics of Women's Liberation (3) (Enroll in REL 575)

SWMS 577 Therapy, Gender, and Ethnicity (3) (Enroll in SOCI 577)

SWMS 588 Seminar in Gay, Lesbian, Bisexual and Transgender Studies (4) Interdisciplinary cross-cultural, historical, psychological, sociological, and contemporary political perspectives on female and male homosexual eroticism, and the emergence of gay, lesbian, bisexual, and transgender identities.

SWMS 590 Directed Research (1–12, FaSpSm) Research leading to the master's degree in cognate fields. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

SWMS 593 Practicum in Teaching the Liberal Arts (2, FaSp) (Enroll in MDA 593)

SWMS 599 Special Topics (2–4, max 8) Seminar in selected topics relating to gender and feminism.

SWMS 621 Gender Discrimination (1–4, FaSp) (Enroll in LAW 621)

SWMS 623 Family Law (3 or 4) (Enroll in LAW 623)

SWMS 630 Studies in Gender (4, max 12) (Enroll in ENGL 630)

SWMS 650 Seminar on Women's and Family History (4, max 8, Sp) (Enroll in HIST 650)

Geography

College Academic Services Building 200
(213) 740-8555

Email: jmcodey@dornsife.usc.edu

Interim Chair: Jane M. Cody, Ph.D.

Courses of Instruction

GEOGRAPHY (GEOG)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

GEOG 255 American Environmentalism (4, FaSm)

Geographic and historic approach to the growth of environmental awareness in the United States from Colonial times to the present. Extensive use of case materials.

GEOG 257g Environment and Ethics (4, SpSm)

Examination of ethical issues in environmental context: systematic analysis of problems associated with protection and use of selected environments. *Concurrent enrollment*: WRIT 140.

GEOG 260Lg Natural Hazards (4, FaSp)

The nature and time/space distribution of extreme geophysical events (e.g., floods, droughts, earthquakes), and the range of individual and social adaptations to the resulting hazard.

GEOG 345 Conservation of Natural Resources (4, Fa)

Interaction between resource conservation and people based on recent advances, current developments, and future resource utilization. Special attention to the western United States. Field trips.

GEOG 360 Environmental Disasters (4, Sp)

Evaluates the causes, effects, and responses to international environmental disasters. Emphasis is on contemporary case studies in a theoretical context.

GEOG 390 Special Problems (1–4, FaSp)

Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

GEOG 393 Field Techniques (4, Fa)

Field exploration of physical and cultural aspects of different regions, with emphasis on rural California. Field methods, especially mapping and interviewing.

GEOG 397 Geography Internship (2–4, max 4, FaSpSm)

Intensive experience in local public agency, private firm, or non-profit agency engaged in applied geographic work. Graded CR/NC.

GEOG 431 California's Changing Landscapes (4, Sp)

Type study of a region; distribution of physical and cultural phenomena; delimitation into natural regions; analysis of human-environment interaction in regions of the state. Field trips.

GEOG 490x Directed Research (1–8, max 12, FaSp)

Individual research and readings. Not available for graduate credit.

GEOG 593 Practicum in Teaching the Liberal Arts (2, FaSp)

(Enroll in MDA 593)

GEOG 599 Special Topics (2–4, max 8, Irregular)

Seminar in selected topics in geography.

GEOG 681 Environmental Modeling with GIS (4, 2 years, Sp)

Advanced topics related to the collection, analysis, modeling, interpretation, and display of environmental information using GIS and related technologies. *Recommended preparation*: graduate standing and prior GIS experience equivalent to SSCI 382L or department approval.

GEOG 682 Health and Place (4, Sp)

Examines the relationship between health and place and how geospatial approaches to analyzing and visualizing spatial data may advance our understanding of disease systems. Graduate standing.

GEOG 790 Research (1–12, FaSpSm)

Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

GEOG 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSpSm)

Credit on acceptance of dissertation. Graded IP/CR/NC.

German

Taper Hall of Humanities 255

(213) 740-2735

FAX: (213) 740-8560

Email: german@dornsife.usc.edu

Faculty

See also Slavic Languages and Literatures, page 465xx.

Emeritus Professor: Gerhard Clausing, Ph.D.

Emeritus Associate Professor: Cornelius Schnauber, Ph.D.

The USC Dornsife College of Letters, Arts and Sciences offers a variety of courses from basic and advanced language classes to literature classes and general and cultural topics.

Note: Students are no longer being admitted as majors in German.

German Minor Requirements

REQUIRED COURSES, LOWER-DIVISION

		UNITS
GERM 101	German I	4
GERM 102	German II	4
GERM 201	German III, Conversation and Composition	4
GERM 221	Conversational German IV, or the equivalent by test	4

REQUIRED COURSES, UPPER-DIVISION

Four courses — 16 units in the two areas of concentration.

One course from the following:

GERM 310*	Business German I	4
GERM 311*	Business German II	4
GERM 470	Advanced Composition and Stylistics	4

*Prerequisite: GERM 201 or the equivalent by test.

Three elective courses from the following (only one course each from HIST and IR may be counted toward the minor):

GERM 320	Composition and Conversation on Contemporary Affairs	4
GERM 325	Composition and Conversation in Cultural History	4
GERM 330	Introduction to Literary Studies	4
GERM 346	German Folklore and Popular Culture	4
GERM 352	Colloquium on Poetry	4
GERM 353	Colloquium on Prose	4
GERM 360	20th Century German Prose: Texts and Films	4
GERM 410	Profile of German Literature I	4
GERM 420	Profile of German Literature II	4
HIST 323	The Holocaust in 20th Century Europe	4

HIST 414	Contemporary Europe	4
HIST 427	The German Question: Nation and Identity in Modern Central Europe	4
HIST 428	Life and Death in Nazi Germany	4
HIST 445	Comparative History and Theory of Fascism and Nazism	4
IR 369	Contemporary European International Relations	4
IR 385	European Foreign Policy and Security Issues	4
IR 468	European Integration	4
POSC 463	European Politics	4

Courses of Instruction

GERMAN (GERM)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

GERM 020x Course in Reading German (2) For graduate students who wish help in meeting the German reading requirement for the Ph.D. degree. Emphasis on development of reading skills. Not available for degree credit. Graded CR/NC.

GERM 025x Course in Reading German (2) Continuation of 020x. Reading selections appropriate to candidate's major field. Not available for degree credit. Graded CR/NC.

GERM 101 German I (4) Introduction to modern German. Oral practice, listening and reading comprehension. Basic structures necessary for simple spoken and written expression.

GERM 102 German II (4) Continuation of German I. Introduction to German culture. *Prerequisite:* GERM 101.

GERM 201 German III, Conversation and Composition (4) Intermediate German. Increasing emphasis on listening and speaking skills and a review of basic structures of German. Discussion of cultural aspects. *Prerequisite:* GERM 102.

GERM 221 Conversational German IV (4) Conversational German in a variety of topical settings and vocabulary domains. *Prerequisite:* GERM 201.

GERM 310 Business German I (4, Sp) Introduction to German business language structure including correspondence and oral communication. In German. *Prerequisite:* GERM 201.

GERM 311 Business German II (4, Fa) Continuation of GERM 310. Terminology and style of commercial and legal texts, analyzed and applied in oral and written work. In German. *Prerequisite:* GERM 201.

GERM 320 Composition and Conversation on Contemporary Affairs (4) Practice in oral and written German, emphasizing contemporary cultural and social developments in the German-speaking countries of Europe. In German. *Prerequisite:* GERM 221.

GERM 325 Composition and Conversation in Cultural History (4) Practice in oral and written German, emphasizing the cultural history of the German-speaking countries of Europe. In German. *Prerequisite:* GERM 221.

GERM 330 Introduction to Literary Studies (4) Review of essential literary terms, concepts, and critical methods through analysis and discussion of selected primary and secondary works. In German.

GERM 335 Applied German Drama (4, max 8) Works of a German playwright in their social and cultural context, leading to a dramatization of one of the works. In German.

GERM 340 German Prose Fiction from Goethe to Thomas Mann (4) Examines German prose fiction from the late 18th to the early 20th centuries, with particular emphasis on how narrative texts are constructed. In English.

GERM 346 German Folklore and Popular Culture (4) Survey and analysis of folklore and cultural phenomena, including tales, legends, and myths; folk and popular music; beliefs and customs. In English.

GERM 351 Colloquium on Drama (4) German drama from the 18th century, with emphasis on modernism (since Büchner) and the 20th century avant garde styles: Expressionist, Epic, Grotesque, Documentary, and Sprechtheater. In German.

GERM 352 Colloquium on Poetry (4) Definition and analysis of lyric genre through a study of major poets, such as Goethe, Schiller, Heine, Rilke, and Hofmannsthal; poetic traditions from the 17th century to the present. In German.

GERM 353 Colloquium on Prose (4) Study of German prose from the 18th century to the present; emphasis on narrative and thematic perspectives in relation to social change and on modernism since Kafka. In German.

GERM 360 20th Century German Prose: Texts and Films (4) Aesthetic and historical analysis of major German 20th century novels, complemented by brief study of cinematic adaptation of each text. Texts in English; films with subtitles.

GERM 370 Literature and Culture in Vienna at the Turn of the Century (4) Literature, culture, and society in Vienna 1890–1925; works by figures such as Schnitzler, Hofmannsthal, Kafka, Musil, Kraus, Schönberg, Kokoschka, Freud, Wittgenstein, and others. In English.

GERM 372 Literature and Culture in Berlin of the 1920s (4) Literature, culture, and society through works by figures such as Kaiser, Toller, Brecht/Weill, Piscator, Th. Mann, Doebelin, Lukacs, Heidegger, etc. Films: *Caligari*, *Metropolis*, *Berlin, M*, *Blue Angel*. In English.

GERM 390 Special Problems (1–4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

GERM 410 Profile of German Literature I (4) Survey of major trends in German literature within their historical and cultural contexts from the beginnings to the Baroque period. In German.

GERM 420 Profile of German Literature II (4) Survey of major trends, figures, and authors in German literature and culture of the 18th and 19th centuries within the European context. In German.

GERM 430 Age of Goethe (4) Background and significance of the period; lyrics, major dramatic and prose works from 1770–1832; Storm and Stress; Classicism; Goethe and Schiller. In German.

GERM 440 Women's Literature in Germany I (4) Reading and analysis of medieval texts from German-speaking countries, written by and about women: science, love, poetry, letters, drama, mysticism, romance. Conducted in German.

GERM 460 Expressionism to the Present (4) Representative authors and works since 1910; World War I, Expressionism, New Objectivity, World War II; literature after 1945: East and West, Swiss and Austrian.

GERM 465 Germany East and West (4) Study of the ideological, economic, social, and cultural differences between East and West Germany between 1945 and 1990 and their impact on today's unified Germany. In English.

GERM 466 The German Speaking Nations (4) Focus on the culture, history, and society of Austria, East and West Germany, and Switzerland. In German.

GERM 470 Advanced Composition and Stylistics (4) Development of competence in written expression; fundamentals of style in expository writing. In German.

GERM 490x Directed Research (1–8, max 12) Individual research and readings. Not available for graduate credit.

GERM 499 Special Topics (2–4, max 8) Intensive study of selected topics or regions.

GERM 508 Bibliography and Research Techniques (4) Bibliographic sources, reference works and periodicals, standard bibliographic formats; research methods and the writing of genres, stylistics, and textual interpretation.

GERM 510 Methods of Literary Criticism and Linguistic Analysis (4) Historical perspective on critical methods such as genre poetics, hermeneutics, Marxist and Freudian theories, structuralism, reception-aesthetics, literary semantics, pragmatics, and text linguistics.

GERM 581 Weimar Culture (4) A historical topic-oriented exploration of cultural activities in Weimar Germany. Examination of reflections of the social-political experience of the period in literary (essay, cultural critique, investigative reporting) and pictorial (painting, sculpture, photography, film) discourse.

GERM 590 Directed Research (1–12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

GERM 593 Practicum in Teaching the Liberal Arts (2, FaSp) (Enroll in MDA 593)

GERM 595ab Directed Readings (2–4, 2–4)

GERM 599 Special Topics (2–4, max 8) Special topics such as concepts of government, roots of fascism, and ideologies of Hegel, Marx, Wagner, Nietzsche in German literature.

GERM 637 Seminar in Brecht (4)

GERM 790 Research (1–12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

GERM 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC.

Health and Humanity

Department of Anthropology
Grace Ford Salvatori 120
(213) 740-1902
Email: jsilverm@usc.edu

Bachelor of Arts in Health and Humanity

The Bachelor of Arts in Health and Humanity is a liberal arts degree. It is intended for students interested in fields that inform the health professions and in related questions about health and human experience. Courses in this interdisciplinary major meet many of the requirements for admission to the professional programs in medicine, nursing and other fields, but do not meet all of those entrance requirements. Some electives in this major have prerequisites in mathematics and physics that cannot be counted toward the 36-unit requirement in major electives. Students should consult their academic advisers for precise information on prerequisites and admission requirements for specific health fields.

Summary of Requirements

Core: 24 units; experiential learning: 1–4 units; major electives: one thematic module 16–20 units, other electives 16–20 units; total requirements: 61–64 units including at least 36 upper-division units plus prerequisites for certain electives.

CORE (16 LOWER-DIVISION, 8 UPPER-DIVISION)		UNITS
ANTH 300	Evolution, Ecology, and Culture	4
BISC 120L	General Biology: Organismal Biology and Evolution, or	
BISC 121L	Advanced General Biology: Organismal Biology and Evolution	4
BISC 220L	General Biology: Cell Biology and Physiology, or	
BISC 221L	Advanced General Biology: Cell Biology and Physiology	4
BISC 320L	Molecular Biology	4
CHEM 105aLbL	General Chemistry, or	
CHEM 115aLbL	Advanced General Chemistry	4-4

EXPERIENTIAL LEARNING (1–4 UNITS)		UNITS
Choose one course. A health-related internship is required:		
AMST 365	Leadership in the Community	4
GERO 495	Practicum in Geriatric Care	4
MDA 250	Internship for Liberal Arts: Work and Career — Theory and Practice	1–2, max 4

POSC 395	Directed Governmental and Political Leadership Internship	4
SWMS 311	Gender Studies and the Community: Internship	4

MAJOR ELECTIVES

Choose one complete thematic module from the list below (16–20 units). Then choose additional electives from the list of modules to equal nine courses (36 units) in all. No more than two courses may be lower-division (100- or 200-level). At least two courses must come from Group A and two courses from Group B.

Group A		
<i>Bioethics Module (16 units)</i>		
ANTH 305	Childhood, Birth and Reproduction, or	
POSC 333	Stigma and Society: Physical Disability in America, or	
SOCI 475	Medical Sociology	
GERO 475	Ethical Issues in Geriatric Health Care, or	
OT 375	The Narrative Structure of Social Action: Narrative, Healing and Occupation	4
REL 319	Religious and Ethical Issues in Death and Dying, or	
REL 341	Ethics in a Technological Society, or	
REL 360	Ethical Issues in the New Medical Revolution	4
REL 460	Senior Seminar: Medical Ethics	4

Health, Gender and Ethnicity Module (16 units)

ANTH 125	Social Issues in Human Sexuality and Reproduction, or	
SWMS 225	Gender, Sex, and Science: A Gender Studies Approach	4
ANTH 305	Childhood, Birth and Reproduction, or	
ANTH 405	Evolutionary Medicine	4
PSYC 462	Minority Mental Health	4
SWMS 336	Health, Gender, and Ethnicity, or	
SWMS 420	Woman, Nature, Culture: The Behavioral Ecology of Women	4

<i>Health and Aging Module (16 units)</i>		
GERO 320	Psychology of Adult Development (Recommended preparation: PSYC 100), or	
GERO 330	Society and Adult Development	4
GERO 340	Policy, Values, and Power in an Aging Society, or	
GERO 437	Social and Psychological Aspects of Death and Dying	4
GERO 380	Diversity in Aging, or	
GERO 435	Women and Aging: Psychological, Social and Political Implications	4
GERO 416	Health Issues in Adulthood	4

<i>Health and the Mind Module (20 units)</i>		
PSYC 100	Introduction to Psychology	4
PSYC 320	Principles of Psychobiology, or	
PSYC 326	Behavioral Neuroscience	4
PSYC 336L	Developmental Psychology	4
PSYC 360	Abnormal Psychology, or	
PSYC 404L	Psychophysiology of Emotion, or	
PSYC 426	Motivated Behaviors	4
PSYC 361	Introduction to Clinical Psychology, or	
PSYC 462	Minority Mental Health	4

<i>Global Health Module (20 Units)</i>		
ANTH 101	Body, Mind, and Healing, or	
ANTH 105	Culture, Medicine, and Politics	4
ANTH 305	Childhood, Birth and Reproduction, or	
ANTH 405	Evolutionary Medicine	4
IR 305	Managing New Global Challenges, or	
IR 382	Order and Disorder in Global Affairs	4
IR 306	International Organizations, or	
IR 371	Global Civil Society: Non-State Actors in World Politics	4
IR 344	Developing Countries in World Politics	4

Group B		MATH 208x	Elementary Probability and Statistics		BISC 403	Advanced Molecular Biology, or	
<i>Biological Sciences Module (20 units)</i>				4			
BISC 290L	Introduction to Biological Research (lab assignment required), or				BISC 435	Advanced Biochemistry	4
		<i>Biochemistry Module (20 units)</i>					
BISC 490x	Directed Research (lab assignment required)	4	BISC 330L	Biochemistry	4	<i>Biotechnology Module (20 units)</i>	
BISC 325	Genetics, or		CHEM 300L	Analytical Chemistry	4	BISC 325	Genetics
BISC 330L	Biochemistry	4	CHEM 322abL	Organic Chemistry, or		BISC 330L	Biochemistry
CHEM 322abL	Organic Chemistry, or		CHEM 325abL	Organic Chemistry	4-4	BISC 406L	Biotechnology
CHEM 325abL	Organic Chemistry	4-4	CHEM 432	Physical Chemistry for the Life Sciences, or		CHEM 322abL	Organic Chemistry, or
					CHEM 325abL	Organic Chemistry	4-4

History

Social Science Building 153

(213) 740-1657

FAX: (213) 740-6999

Email: history@dornsife.usc.edu
dornsife.usc.edu/hist

Chair: William Deverell, Ph.D.

Faculty

University Professor: Kevin Starr, Ph.D.

John R. Hubbard Chair in British History: Judith Bennett, Ph.D.*

John R. Hubbard Chair in British History: Cynthia Herrup, Ph.D.

Gordon L. MacDonald Chair in History: Joan Piggott, Ph.D.

Shapell-Guerin Chair in Jewish Studies: Wolf Gruner, Ph.D.

Andrew W. Mellon Professor of the Humanities: Peter C. Mancall, Ph.D.

Professors: Elinor A. Accampo, Ph.D.; Lois W. Banner, Ph.D.*; Lisa Bitel, Ph.D.; Leo Braudy, Ph.D. (*English*); William Deverell, Ph.D.*; Mary Dudziak, Ph.D. (*Law*); Alice Echols, Ph.D. (*English*)*; Philip J. Ethington, Ph.D.; Richard W. Fox, Ph.D.; Howard Gillman, Ph.D. (*Political Science*); Ariela Gross, Ph.D. (*Law*); Karen Halttunen, Ph.D.; Deborah Harkness, Ph.D.*; Daniel Klerman, Ph.D. (*Law*); Carolyn Malone, Ph.D. (*Art History*); John Pollini, Ph.D. (*Art History*); Azade-Ayşe Rorlich, Ph.D.*; Steven J. Ross, Ph.D.*; George J. Sanchez, Ph.D.* (*American Studies and Ethnicity*); Mary Sarotte, Ph.D. (*International Relations*); Vanessa Schwartz, Ph.D.; David Sloane, Ph.D. (*Public Policy*); Jacob Soll, Ph.D.

Associate Professors: Marjorie R. Becker, Ph.D.; Bettine Birge, Ph.D. (*East Asian Languages and Cultures*); Daniela Bleichmar, Ph.D. (*Art History*); Jason Glenn, Ph.D.; Joshua Goldstein, Ph.D.; Sarah Gualtieri, Ph.D.*; Kyung Moon Hwang, Ph.D.; Lon Kurashige, Ph.D.; Paul Lerner, Ph.D.*; Mariá Elena Martín, Ph.D.; Ramzi Roughi, Ph.D.; Brett Sheehan, Ph.D.*; Francile Wilson, Ph.D. (*American Studies and Ethnicity*)

Assistant Professors: Gerard Clinton Rainier Godart, Ph.D.; Nathan Perl-Rosenthal, Ph.D.; Diana Williams, Ph.D.

Assistant Professor (Research): Peter Westwick, Ph.D.

Professor Emerita and John R. Hubbard Chair Emerita in History: Carole Shammas, Ph.D.

Emeritus Professors: Gordon M. Berger, Ph.D.; Roger Dingman, Ph.D.; Charlotte Furth, Ph.D.; Paul W. Knoll, Ph.D.; Ernest B. Koenker, Ph.D.; Franklin D. Mitchell, Ph.D.; A. Lloyd Moote, Ph.D.; D. Brendan Nagle, Ph.D.; Edwin J. Perkins, Ph.D.; Charles R. Ritcheson, Ph.D., Litt.D.; John E. Wills, Ph.D.

Emeritus Associate Professor: Terry L. Seip, Ph.D.*

*Recipient of university-wide or college teaching award.

The Department of History offers courses in ancient, medieval and modern European history, including Russian history; in both North and Latin American history; in the history of East Asia; and in world history. Some of the department's courses are chronological, some national or regional and some are thematic, with special strengths in gender, race and ethnicity, popular culture, medicine and urban history. The faculty is committed to continuous review and revision of the department curriculum, as student needs and professional emphases shift. Many departmental courses meet general education requirements, and various programs for majors and non-majors are available.

The department offers an honors program for qualified seniors. Honors programs are individually arranged through consultation with the honors director, and completion of an honors thesis is required.

Degree Programs

The Department of History offers the B.A., a minor, the M.A. and Ph.D. in History.

Honor Society

The department sponsors its own local chapter of Phi Alpha Theta, the national history honor society. Phi Alpha Theta provides opportunities for students to take their interest in history beyond the classroom and to cultivate their intellectual pursuits in a community setting.

Membership is open to history majors and other interested students with a 3.33 GPA in history courses and a 3.0 overall GPA. For more information contact the honors director.

Undergraduate Degrees

Advisement

All history department majors should consult with the department student adviser and with one of our faculty advisers. Students should seek an appointment early in each semester so that an advisement file may be established for each student. The file will be kept current.

Bachelor of Arts in History

HIST 201 Approaches to History is required of all majors. In addition, ten courses in history are required, three at the lower-division level and six at the upper-division level. The three required lower-division courses must include one from the 100 level and one from the 200 level, and each of the three must be from a different geographic category. The department will accept scores of 4 or 5 on either Advanced Placement European History or Advanced Placement American History as a substitute for one requirement at the 100 level. At the upper division, majors are required to take a minimum of three courses in a thematic, temporal or geographic concentration they articulate under the guidance of faculty; they must also take at least two upper-division seminars, approved by the department, including one in their concentration. No more than 4 units of HIST 490 Directed Research may be counted as satisfying the upper-division seminar requirement.

For geographic breadth, at least one of the 10 courses must be taken from approved course work in each of the three following areas: Asia and Eurasia, Europe, and North and Latin America. For temporal breadth, at least one of the 10 courses must be taken from approved course work in each of the three following time periods: before 1300, 1300 to 1800, 1800 to the present. Students must consult with a department adviser in order to determine which courses meet these requirements.

Bachelor of Arts in History and Social Science Education

This degree is designed for students who are interested in a career in secondary school teaching. The courses chosen reflect the content of subjects taught in high schools and middle schools in California and therefore should be useful for those contemplating the profession of teaching history and social studies. It does not, however, provide a waiver of the CSET examination.

REQUIRED COURSES		UNITS
ECON 203	Principles of Microeconomics	4
ECON 205	Principles of Macroeconomics	4
HIST 201	Approaches to History	4
HIST 240	The History of California	4
HIST 349	Colonial North America 1600–1760	4
HIST 360	19th Century U.S. History	4
HIST 361	20th Century U.S. History	4
HIST 440	Early Modern World History	4
HIST 441	Modern World History	4

At least one of the following:

HIST 101	The Ancient World	4
HIST 102	Medieval People: Early Europe and Its Neighbors, 400–1500	4
HIST 103	The Emergence of Modern Europe	4
HIST 180	The Middle East	4
HIST 275	The Worlds of the Silk Road	4
HIST 335	History of Japan to 1550	4
HIST 338	China to 960 A.D.	4
HIST 339	China, 960–1800 A.D.	4

At least one of the following:

HIST 104	Modern Europe	4
HIST 333	Korea: The Modern Transformation	4
HIST 336	History of Japan, 1550–1945	4
HIST 340	History of China since 1800	4
HIST 383	The Modern Middle East	4

At least one of the following:

HIST 369	Aztecs, Mayas and Other Indigenous Peoples of the Americas	4
HIST 370	Spanish America, 1492–1821	4
HIST 372	Modern Latin America	4

One of the following:

POSC 100	Theory and Practice of American Democracy	4
POSC 300	Principles, Institutions, and Great Issues of American Democracy	4
POSC 340	Constitutional Law	4

Required Capstone Seminar

A capstone seminar, HIST 488 Teaching History in the Secondary Schools, will be taught by a member of the history department and will focus on the ways in which historical research is brought into middle and high school curriculum. Seminar participants will examine textbooks and other materials designed for history instruction; engage in independent research; write curriculum and/or classroom units or lesson plans; and visit classrooms to assist with history instruction in the schools.

Bachelor of Arts in Law, History, and Culture

This major is designed for students drawn to interdisciplinary study of legal and cultural issues, as well as those who intend to pursue a law degree. It offers students an interdisciplinary education in legal institutions, languages and processes that are central to social, cultural and political developments in the past

and present, and play a critical role in shaping our most basic concepts and categories of thought and identity. It combines approaches from history, literature, philosophy, political theory, religion and classical studies to explore the law's position at the nexus of society. The major will help students develop the critical skills of reading, writing and analysis crucial to both a liberal education and the study of law. Students will gain theoretical and analytical perspectives on ethical, political and social issues relevant to law as they explore specific legal issues from a humanistic perspective.

REQUIRED COURSES **UNITS**
This major requires 36 units from the following courses:

Required course:

LAW 300	Concepts in American Law	4
Choose at least four of the following courses:		
AMST 342	Law and Identities	4
ANTH 345	Politics, Social Organization, and Law	4
CLAS 305	Roman Law	4
HIST 385	Anglo-American Law before the 18th Century	4
HIST 386	American Legal History	4
HIST 463	The Constitutional History of the United States	4
POSC 130	Law, Politics, and Public Policy	4
SWMS 349	Women and the Law	4

Choose at least four of the following courses from at least two departments:

AMST 101, AMST 320, AMST 353, AMST 357, AMST 389, CLAS 320, CLAS 333, CLAS 340, CLAS 348, CLAS 370, CLAS 470, COLT 385, COLT 472, COLT 475, ENGL 472, ENGL 474, ENGL 481, HIST 220, HIST 265, HIST 312, HIST 323, HIST 355, HIST 351, HIST 455, HIST 470, PHIL 135, PHIL 140, PHIL 330, PHIL 430, PHIL 431, POSC 201X, POSC 340, POSC 345, POSC 370, POSC 371, POSC 374, POSC 375, POSC 377, POSC 380, POSC 426, POSC 443, POSC 444, REL 360, REL 414, SOCI 351, SOCI 353, SWMS 355

Bachelor of Arts in Middle East Studies

See the Department of Middle East Studies, page 412xx, for a complete listing of requirements.

Interdisciplinary Minor in Resistance to Genocide

To resist genocide effectively, we need to understand its history — the factors that have brought it about and those that have enabled people to prevent, resist or recuperate from mass violence. This interdisciplinary minor draws upon USC faculty in 11 academic units researching the causes, results and representations of attempted genocide as well as resistance to genocidal mass violence. Courses include attention to different definitions of genocide, its occurrence around the world and its representation in literature and the arts.

Course Requirements

The minor requires five courses (20 units); at least four must be at the upper-division level. As with all minors, students must choose at least four courses (16 units)

outside their major department and four courses (16 units) that are not being used to satisfy any other subject requirement.

LOWER-DIVISION REQUIREMENT

Choose one course (four units) from the following list:

List A		
JS 211	The Holocaust	4
POSC 248	International Human Rights	4
POSC 260	Global Ethnic Politics	4

UPPER-DIVISION REQUIREMENTS

Choose four courses (16 units) from the lists below, at least one from each list:

List B — Representations of Genocide

COLT 485	The Shoah (Holocaust) in Literature and the Arts	4
ENGL 444	Native American Literature	4
FREN 373	Remembering Loss, Writing a Memory	4
ITAL 352	The Holocaust in Italian Fiction and Film	4
JS 362	Terror and Resistance in Literature and the Media	4
MUSC 430	Music and the Holocaust	4

List C — The Reality of Genocide

ANTH 357	Culture of Genocide	4
HIST 323	The Holocaust in 20th Century Europe	4
HIST 428	Life and Death in Nazi Germany	4
IR 313	Religions and Political Violence	4
MDA 330	The Armenian Heritage: History, Arts, and Culture	4
POSC 366	Terrorism and Genocide	4
PSYC 453*	Intergroup Relations	4

List D — Capstone Courses: Resisting Genocide

HIST 444	Mass Violence and Comparative Genocide in Modern World History	4
HIST 446	Resistance to Genocide	4

*Prerequisite: PSYC 355

Minor in History

The minor in history is available to students in all schools and departments. The study of history deepens our understanding of peoples and societies and expands our knowledge of important issues operative in the world today. History minors will strengthen their skills in critical thinking, assessing evidence, and formulating clear and persuasive arguments both oral and written. History is essentially a laboratory of human experience, and students from a wide range of disciplines can discover new perspectives on their own intellectual interests through the study of the past.

Prerequisites: cumulative GPA of 2.0 or better and approval of a minor plan of study by the department's undergraduate adviser.

Requirements: 20 upper-division units, including a minimum of 16 upper-division units from Department of

History offerings. The remaining 4 units may come from either (1) HIST 201 (preferable), or (2) upon the approval of a History Department adviser, 4 upper-division units from another department.

An appropriate capstone course chosen from 400-level seminar offerings must be included in the proposed program as part of the departmental work. The capstone course will normally be the last (or among the last) courses taken for the minor.

Honors Program

The department offers a two-semester honors program, in which qualified students spend their first semester in an honors track in an upper-division seminar or take HIST 490 Directed Research in their concentration. During the second semester, all honors students are required to take HIST 492 Honors Thesis in which each completes a thesis project on a topic of his or her choosing under faculty direction. Contact the department honors director for further information. To graduate with honors, department majors must have a minimum GPA of 3.5 in their major course work.

Teaching Credential Requirements

Credential requirements in California and elsewhere are complex and changeable. Students interested in preparing for public school teaching should contact the Credentials Office, Rossier School of Education, and the undergraduate adviser, Department of History, for up-to-date information.

Interdisciplinary Minor in Early Modern Studies

This minor brings together the resources of the departments of English, History and Art History to study the literatures and cultures of Europe and the Americas from the late medieval period to 1800. For a complete listing of requirements, see Department of English, page 340xx.

Interdisciplinary Middle East Studies Minor

See the Department of Middle East Studies, page 412xx.

Interdisciplinary Race, Ethnicity and Politics Minor

See Department of Political Science, page 439xx.

Interdisciplinary Russian Area Studies Minor

See Department of Slavic Languages and Literatures, page 466xx.

Interdisciplinary Law and Society Minor

See Department of Political Science, page 439xx.

Graduate Degrees

The graduate program in history provides advanced training in historical research and writing leading to the Doctor of Philosophy degree. Once admitted to the Ph.D. program, a student in exceptional cases may work for a Master of Arts degree, but the department does not accept applicants for an M.A. For further information, contact the director of the graduate program for the Department of History.

Admission Requirements

Prerequisites

An applicant should have an undergraduate degree or an M.A. degree in history or a related discipline. Promising students trained in other fields will also be considered.

Criteria

All applicants must take the general test of the Graduate Record Examinations. The subject test in history is not required. In addition, applicants must submit at least three letters of recommendation from college-level instructors and a sample of written work from a college-level history, social science or humanities course. This material should be submitted to the director of the graduate program for the Department of History.

Procedure

For complete information on the doctoral programs, prospective applicants should address inquiries to Graduate Admissions, Department of History, SOS 153, University of Southern California, Los Angeles, CA 90089-0034. Information on the programs is also available online at usc.edu/schools/college/history/programs/graduate.

Degree Requirements

These degrees are under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue (page 97xx) for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School.

Master of Arts in History

The department does not accept applicants for a Master of Arts degree in history. The M.A. degree is intended only as a transitional degree in the process of completing requirements for the Ph.D. in history.

Foreign Language/Research Tool Requirement

Students are required to demonstrate competence in one foreign language, with the exception that none is required of majors in United States history.

Course Requirements

All students must enroll in HIST 500 Introduction to Graduate Historical Studies, and it is recommended that it be completed in the first year of residence.

Thesis Plan

Students must take a minimum of six graduate courses, including HIST 500 plus HIST 594ab Master's Thesis. No more than two 400-level courses may count toward this total. A thesis must be written and defended.

Comprehensive Examination Plan

This plan requires the approval of the student's qualifying exam committee chair to substitute a comprehensive examination for the thesis. If approved, the student completes eight graduate level courses, including 500, with no more than two 400-level courses counting toward this total, plus written exams in three fields, one of which may be in another department. Examinations are normally offered in October and April. An oral examination may be given at the discretion of the qualifying

exam committee. Examinations are graded on an honors, pass or fail basis. Any student who receives a grade of fail in two examinations is considered as not having qualified for the degree. A student who receives one fail must retake an examination in that field at the next scheduled examination period. An examination cannot be retaken more than once.

Doctor of Philosophy in History

Application deadline: December 1

The history profession nationwide combines a traditional emphasis on geo-temporal fields (e.g., U.S. in the 19th century; medieval Europe) with a new emphasis on trans-nationalism, comparative history and interdisciplinary investigation. The USC program is at the forefront of these trends. Following the traditional emphasis, each graduate student must declare a major field in a geo-temporal area at the time of application to the program. Major fields of study include: China, Japan, Korea, Latin America, Middle East, American/United States, medieval Europe, early modern Europe and modern Europe. The purpose of the major field is to prepare students broadly for teaching and research.

By the beginning of his or her second year in the program, each graduate student must declare a minor field and an area of specialization. The minor field is intended to broaden skills beyond the geo-temporal boundaries of the major field; the area of specialization is intended to deepen the student's scholarly training in the chosen area of the dissertation. The minor field may be chosen from the list of major fields (i.e., a student entering the program with American/U.S. as a major field might select "modern Europe" as a minor field), or it may be conceived comparatively, thematically or cross-disciplinarily. Possible minor fields include: Latin America; pre-modern Japan; the colonial Americas; gender and sexuality; visual culture; and anthropology. Possible fields for the area of specialization include: 19th or 20th century U.S. intellectual history; visual culture of the 20th century; modern European cities; and the American West. These lists are not exhaustive and are meant to suggest only possible courses of study.

For the major field, each student must take a minimum of four courses; for the minor field two courses; for the area of specialization three courses. Either the minor field or the area of specialization must be outside the major field of study, transnational or outside the discipline of history. Each student must consult with his or her adviser in putting together these fields of study.

Foreign Language/Research Tool Requirements

Students are required to demonstrate competence in two foreign languages to be selected in consultation with the faculty adviser. Students in United States history may substitute competence in quantitative methods for one foreign language. The requirements in this category must be met before a student is eligible to take the qualifying examination.

Course Requirements

All entering students (including those with M.A. degrees) are required to take HIST 500 in their first semester of study. All students are required to take two 600-level research seminars in the History Department. At least one of these seminars must be in the major

area of study. Students must complete a minimum of 60 units of course work. No more than 8 units of the 60 may be in HIST 794 (dissertation writing). Students must complete at least 30 units of graduate course work within the History Department.

Screening Procedures

The performance of every doctoral student is formally evaluated by the full faculty of the History Department, normally at the end of the spring semester and before a student has completed 24 units toward the degree. Unsatisfactory progress toward the degree requires either remedy of the deficiencies or termination of the student's graduate program. After successfully passing the screening procedures, each student establishes a qualifying exam committee which then supervises preparation for the qualifying examination.

Qualifying Exam Committee and Qualifying Examinations

Each student must set up a qualifying exam committee by the end of the third semester in residence. It includes at least five members, at least three of them from the History Department, and at least one of them from outside the History Department (this person must be a tenure-track faculty member from a Ph.D. granting program). The qualifying exam committee will oversee the student's written and oral qualifying examination, which should be taken by the end of his or her fifth semester in residence and no later than the end of the sixth semester. The examination covers the major field, minor field and area of specialization. Students prepare for these exams by developing, in collaboration with their qualifying exam committee, reading lists for study in their major field, minor field and area of specialization.

The qualifying examination consists of two parts: (1) Three four-hour written responses, based, respectively, on the major field, the minor field and the area of specialization; (2) a two-hour oral session, which may include some discussion of the written exam. Students with one fail or more than two low-pass grades on the written responses will not be permitted to sit for the oral segment of the examination. The qualifying exam committee determines whether a student may retake any parts of the examination graded low-pass or fail.

A student must wait at least six, but not more than nine, months to retake any part, or all, of the qualifying examination. No part of the examination can be retaken more than once.

Dissertation

After students have successfully completed their qualifying examinations, they will select a dissertation committee consisting of at least three members, including at least two from the History Department. These individuals will be in charge of guiding the dissertation to completion. Within six months of passing the qualifying examination, students must submit a formal dissertation prospectus to all members of the dissertation committee and pass a one-hour prospectus defense convened by that committee. Some students (e.g., those whose major field is East Asia) can, with the approval of their dissertation committee, petition the Graduate Studies Committee for an extension of this six-month deadline. After passing the dissertation prospectus defense, a student is admitted to candidacy

for the Ph.D. degree. The student will thereafter concentrate on the dissertation. After a student becomes a doctoral candidate, he or she must register for HIST 794 Doctoral Dissertation each semester thereafter until the dissertation is completed.

Advisement

Students should seek advice on their program of studies from the director of the graduate program, the professor in their major field of study and other members of their qualifying exam committee.

Courses of Instruction

HISTORY (HIST)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

HIST 100gm The American Experience (4, FaSpSm)

Patterns of American development from Colonial times to the present. (Duplicates credit in former HIST 200gm.)

HIST 101g The Ancient World (4, FaSpSm)

Achievements of the near East, Greece, and Rome with emphasis on the development of ideas, arts, and institutions which have influenced modern man.

HIST 102gm Medieval People: Early Europe and Its

Neighbors, 400–1500 (4) Early Europe, c. 400–1500, with a focus on Europe's diverse communities, cultural interactions among them, dealings between conquerors and conquered, and European contacts with non-Europeans.

HIST 103g The Emergence of Modern Europe (4, Fa)

Political, intellectual, and cultural developments in Europe, 1300–1815. Renaissance and Reformation; absolute monarchy, scientific changes, and Enlightenment; French Revolution and Napoleon.

HIST 104g Modern Europe (4, Sp)

The Enlightenment, French Revolution, industrialization, Darwinism, socialism, nationalism, technological revolutions, mass culture, imperialism, race, fascism, communism, world wars, genocide, migration, the Cold War, terrorism.

HIST 105g The Korean Past (4)

A topical and chronological study of the major political, social, and intellectual forces that have shaped the history of Korea.

HIST 106g Chinese Lives: An Introduction to Chinese

History (4, FaSp) Study of the lives of selected individuals who have helped to shape Chinese politics and culture.

HIST 107g Japanese History (4, FaSp)

Japan from the earliest times to the present; social, cultural, and political dimensions.

HIST 180g The Middle East (4, Sp)

Introduction to the history and the study of the Middle East from ancient to modern times.

HIST 195 Selected Themes and Topics in History (4, Irregular)

Study of special historical themes and topics through readings, lectures, discussions, and supervised writings.

HIST 201 Approaches to History (4, FaSp)

Methods and theories of historical interpretation of evidence; uses of archives; modes of presenting the past to the public. Required of all history majors. (Duplicates credit in former HIST 300.)

HIST 215g Business and Labor in America (4, Fa)

Expansion of business enterprise from colonial merchants to modern corporations; evolution of the labor force from artisans to skilled and unskilled industrial workers. *Concurrent enrollment:* WRIT 140.

HIST 220 Murder on Trial in America (4)

Examination of high-profile murders and murder trials in order to explore major social, political, and cultural issues from the colonial period to the present.

HIST 225g Film, Power, and American History (4, Sp)

U.S. motion pictures as both a response to and comment upon major events, problems, and themes in 20th century America. *Concurrent enrollment:* WRIT 140.

HIST 235g War and the American Experience (4, Fa)

Comparative historical analysis of the American experience of war: war decision-making processes; evolution of strategy and tactics; the political, economic, and social effects of war. *Concurrent enrollment:* WRIT 140.

HIST 240g The History of California (4, Fa)

A thematic approach to California history from precontact to present; focus on peoples, environment, economic, social, and cultural development, politics, and rise to global influence. *Concurrent enrollment:* WRIT 140.

HIST 245gm Gender and Sexualities in American

History (4) An investigation of the nature of femininities and masculinities over the course of U.S. history; including topics like women's rights, birth control, abortion, and gay/lesbian liberation. *Concurrent enrollment:* WRIT 140.

HIST 255g The Evolution Debates (4, Fa)

Historical perspective for current debates on evolution, investigating the contexts for the emergence and development of evolutionary theory and its subsequent impact on society.

HIST 265g Understanding Race and Sex Historically

(4, Sp) To introduce students to historical consideration of the difficult contemporary topics of sexuality and race globally. *Concurrent enrollment:* WRIT 140.

HIST 266g Business and East Asian Culture, 1800–

Present (4, Sp) Business history of East Asia (China, Japan, Korea, Taiwan, and Hong Kong) as related to culture, politics, and society.

HIST 270 Queens, Witches, Courtesans: Women and Power in Renaissance Europe (4) Exploration of the lives of women who defied the ideals of “wife, mother, widow” and examination of how gender and power were negotiated.

HIST 271g Early Native American Stories (4, Sp) An exploration of the history of Native America peoples and the ways they understood and explained the changes in their lives from 1492 to 1840.

HIST 273g Colonial Latin America (4, Sp) Introduction to Colonial Latin America; native American peoples, themes, issues, and evolution of Spanish and Portuguese colonial rule to ca. 1800.

HIST 275g The Worlds of the Silk Road (4, Sp) Exploration of the two millennia of economic exchanges and cross cultural interaction between Asia and Europe.

HIST 301 Religions of Ancient Egypt and the Near East (4) (Enroll in REL 302)

HIST 302 From Sappho to Stonewall: Lesbians in History (4, Sp) The cultural, social, and personal meanings of same-sex relations between women in Europe and the United States, from archaic Greece to the 1960s.

HIST 303 Barbarians, Romans, and Christians (4, Fa) Exploration of the dynamic transformation of the social, political, religious, and intellectual landscape of the Mediterranean during Late Antiquity, c. 200 – c. 700 AD.

HIST 304 Archaeology of Egypt and the Near East (4) (Enroll in REL 394)

HIST 305 From Goddesses to Witches: Women in Premodern Europe (4, Sp) Social, cultural and political contexts of women’s spiritualities in Europe from the Paleolithic to the Reformation. Topics include: goddess-worship; Christian and Jewish contexts; male attitudes. (Duplicates credit in former HIST 270.)

HIST 306 The Early Middle Ages (4) Survey of European civilization in the Early Middle Ages.

HIST 307 Women in Medieval Europe, c. 1000–1500 (4, Fa) The influences of cultural, social, economic, familial, religious, and political factors on medieval women, as well as consideration of differences among them.

HIST 308 Britain and Ireland to 1200 C.E. (4, Fa) Anglo-Saxon and Celtic societies from the Iron Age to the Norman Invasions. Topics include: King Arthur, epics, sagas, Christianization, kingship, women, economic development and Vikings. (Duplicates credit in former HIST 430.)

HIST 309 Britain and Ireland, 1100–1500 C.E. (4, Sp) English and Irish culture, economics, and politics during the expansion of the Norman-English kingdom, the colonization of Ireland, and subsequent development toward the English nation-state.

HIST 312 The Age of the French Revolution and Napoleon (4, Fa) Europe in the Old Regime; causes and course of the French Revolution; rise of Napoleon; revolutionary impact on Europe, 1715–1815.

HIST 313 France and the French from Napoleon to Mitterand (4, Irregular) Social, cultural, and political history of France from 1789 to the present.

HIST 316 The Renaissance (4, Irregular) The flowering of arts, literature, and learning at the end of the Middle Ages.

HIST 317gm North American Indians in American Public Life (4, Irregular) (Enroll in ANTH 316gm)

HIST 318 Early American Indian History (4, Sp) Relations of European settlers with native Americans from the 16th into the early 19th centuries; cultural contacts, trade and eventual conflicts.

HIST 320 Russian and Soviet Rebels: The Moral Dilemma and the Continuity of Dissent (4, Irregular) The ethical foundations and the intellectual dimensions of philosophical, social, religious, artistic, and political dissent in Russia from the 14th century until the present.

HIST 323 The Holocaust in 20th Century Europe (4, Sp) The origins and development of anti-Jewish persecution in Germany, resulting in the systematic mass murder of Europe’s Jews during World War II.

HIST 324g Islam in Russia and the Soviet Union (4, Sp) Cultural cohesiveness and ethnic diversity of Islam in the USSR; nature and effect of government policies aimed at the integration of Islam into the state.

HIST 325 Early Modern Britain (4, Sp) A survey of one of the most pivotal eras in British history: reform, regicide, and revolutions; new ideas, new religions, and new worlds.

HIST 326 The Victorians (4) Britain in the 19th century, politics, industrialization, and imperialism, change and continuity in social and cultural aspects, especially class, gender, and race relations. (Duplicates credit in the former HIST 433.)

HIST 327 Twentieth Century Britain (4) The rise and decline of modern Britain as a global political and economic force, social and cultural change, emergence of a multiracial and multiethnic society. (Duplicates credit in the former HIST 434.)

HIST 328 Poland and the Western Tradition (4, 2 years, Irregular) Polish civilization from the 10th century to the present, with special emphasis upon the participation of Poland in the currents of the European tradition.

HIST 329 Madness and Society in the Modern Age (4) The shifting place of insanity and “the mad” in Europe and the United States from the French Revolution to the anti-psychiatry movement.

HIST 330 Drugs, Disease, and Medicine in History (4, Irregular) An overview of the role played by disease and the health sciences in history.

HIST 331 The British Empire: 1588–1834 (4, Sp) Emergence of the British Empire, emphasizing colonies in the Americas; the development of imperial economy, imperial wars, slavery and abolitionism.

HIST 332 British Empire from the Mid-19th Century (4, FaSp) Political and economic development of the British Empire since Victoria; rise of the British Commonwealth.

HIST 333 Korea: The Modern Transformation (4, Sp) Examination of selected topics on Korea’s transition to the modern era; focus on the traditional roots of 20th century developments.

HIST 334 History of the Samurai (4) Development of the Samurai from a warrior elite to political hegemony between the 8th and 12th centuries; use of primary sources, introduction to divergent historiographies. *Recommended preparation:* a course in Japanese history.

HIST 335 History of Japan to 1550 (4, Irregular) Growth of Japanese civilization from the mythological “age of the gods” through the feudal “age of the samurai”; foundations of a great Asian power.

HIST 336 History of Japan, 1550–1945 (4, Irregular) Development of Japan as a modern world power; tradition and change in Japanese life; impact of Western culture, politics, and diplomacy from 1550 to 1945.

HIST 337 Japan since 1945 (4, Irregular) Survey of the impact of World War II, American occupation, and rapid economic growth on Japan’s politics, society, economy, and culture; Japan as a post-modern nation.

HIST 338 China to 960 A.D. (4, Irregular) The origins of China’s distinctive civilization; cultural and political ferment in the late Chou; the greatness of Han and T’ang.

HIST 339 China, 960–1800 A.D. (4, Irregular) Politics and culture under the Sung; Mongols, Manchus, and other invaders; the golden autumn of a great civilization.

HIST 340 History of China since 1800 (4, Sp) Western impact and dynastic decline; problems of the Chinese Republic; nationalism and communism.

HIST 341 American Social History (4, Irregular) The social history of the American peoples from Colonial times until the 20th century, to include industrialization, urbanization, women, families, workers, immigration, ethnicity, racism, radicalism.

HIST 342 Love and Politics in America, 1750s to 2050s (4, Fa) An analysis of the intersections of love and politics, private and public, in fiction, non-fiction, and film in America from the Enlightenment into the future.

HIST 343 Work, Leisure, and Violence in Industrializing America (4, Irregular) Rise of industrial America from 18th to 20th centuries: changing work ethics, rise of factories, women workers, mass leisure, consumer culture, urban and industrial violence.

HIST 344 The Vietnam War, 1945–1975 (4, SpSm) Analysis of causes, conduct, and consequences of war in Southeast Asia; of participants' experiences; and of post-war debate.

HIST 345 Men and Women in United States History from the 1920s to the Present (4) Investigation of the roles and relationships of men and women in American society and culture from the era of the "flapper" to the era of the "yuppie."

HIST 346 American Intellectual History (4, Sp) Study of major American ideas and values as reflected in philosophy, political and economic thought, religion, and social movements.

HIST 347 Urbanization in the American Experience (4, Irregular) The American city in interdisciplinary perspective; emphasis on growth and change in relation to architecture, urban planning, demography, and ethnic politics.

HIST 348 The Dynamics of American Capitalism (4, Irregular) Economic growth and institutional change in American capitalism from the Colonial era to the present.

HIST 349 Colonial North America 1600–1760 (4, Fa) Colonial history of United States area, Canada, and Caribbean to 1760; Indians, European migration, plantation complexes, Puritan colonies, African slave migration, creole culture, borderlands, wars for empire.

HIST 350 American Standard of Living: 1600 to the Present (4, Fa) Socioeconomic history of material life: Indian experience, colonial diet, urbanization and slums, industrial households, 1920s durables revolution, installment credit, Depression, postwar boom, advertising, international comparisons.

HIST 351 The American Revolution (4, Fa) Origins, course and consequences of the American Revolution; the post-war establishment of the Constitution.

HIST 352 The American Civil War (4, Irregular) The causes, course, campaigns, and consequences of the American Civil War, 1861–1865.

HIST 353m Race and Racism in the Americas (4) (Enroll in AMST 353m)

HIST 354 Mexican Migration to the United States (4, 2 years, Fa) Mexican migration from the 1850s to the present, emphasizing labor migrants to the United States.

HIST 355 The African-American Experience (4, Fa) An historical and social analysis of the African-American experience from Colonial times to the present. (Duplicates credit in former HIST 250).

HIST 356 The Old South (4, Irregular) The South from Colonial days to 1860; slavery, the plantation system, politics; important social and economic problems.

HIST 357 The New South (4, Irregular) Economic and political change, racial problems, society, and culture in the American south from 1877 to the present.

HIST 358 U.S. Gay and Lesbian History (4, Sp) (Enroll in SWMS 358)

HIST 360 19th Century U.S. History (4, Sp) The social, political, and economic history of the United States from the formation of the Constitution to 1900.

HIST 361 20th Century U.S. History (4, Fa) Critical turning points in the 20th century; sources of major social and political change. Course materials include primary documents and historic radio/television recordings.

HIST 363 Foundations of American Foreign Policy, 1776 to the Present (4, Sp) Evolution of American principles, roles and policies in international relations from the founding of the republic to the present.

HIST 365 The Second World War (4, 2 years, Sp) Comparative analysis of the Second World War as a major transforming event of the 20th century. Its causes, conduct, and consequences for humanity.

HIST 366 The People's Republic of China (4) Politics, economy, society, and culture from 1949 to the present including the role of the communist party and the experiences of ordinary people.

HIST 369 Aztecs, Mayas, and other Indigenous Peoples of the Americas (4) Introduction to Pre-Columbian Mesoamerica and the Andes, the causes and consequences of the Spanish conquest, and the establishment of colonial societies and economies.

HIST 370 Spanish America, 1492–1821 (4, Sp) Topics in Spanish colonialism in Americas, with a focus on how religious, sexual, and racial differences shaped colonial policies and practices.

HIST 372 Modern Latin America (4, Sp) Exploration of major themes and events in Latin American history from independence to the present. Upper-division standing.

HIST 373 History of the Mexican American (4, FaSp) (Enroll in AMST 373)

HIST 374 History of Mexico (4, Fa) The native cultures of Meso-America; colonial government, economy, and society; independence and 19th century liberalism; the Mexican revolution, 1910 to 1950. (Duplicates credit in former HIST 450.)

HIST 376 U.S.-Japan Encounters: War, Trade, and Culture (4, Fa) (Enroll in IR 376)

HIST 378m Introduction to Asian American History (4, FaSp) (Enroll in AMST 378m)

HIST 379 Arabs in America (4, FaSp) (Enroll in AMST 379)

HIST 380 American Popular Culture (4, Sp) Rise of popular culture (sports, amusement parks, movies, and television) and its significance in American society from mid 19th century to the present. (Duplicates credit in former HIST 255.)

HIST 381 Cinema and History (4, Irregular) Examines film as a means to narrate the past; treats the question of genre: epic, docudrama, the biopic, the music, adaptation, and such issues as authenticity and infotainment.

HIST 382 The Middle East, 500–1500 (4) Major topics, themes, and representative writings in the history and literature of the Arabic and Islamic World during the Medieval period.

HIST 383 The Modern Middle East (4, FaSp) Survey of major political, economic, and cultural developments in the Middle East on the basis of documents, literature, and film produced in the region. (Duplicates credit in former HIST 280.)

HIST 384 Popular Culture in the Middle East (4, FaSpSm) Examination of the Middle East through the prism of its popular cultures; emphasis on audio, visual, and literary representations in relation to colonialism, nation-building, and globalization.

HIST 385 Anglo-American Law before the 18th Century (4) The evolution of discourse, practices, and institutions in Anglo-American legal history from the later Middle Ages to the 18th century.

HIST 386 American Legal History (4, Sp) An introduction to the study of law from a historical perspective; explores the interaction of law, culture, and politics from the Revolution through the New Deal.

HIST 388 Women and Gender in North American History through 1920 (4) Roles and relationships of women and men in North America from first contact to the 1920s, with special emphasis on race, marriage, and political culture.

HIST 390 Special Problems (1–4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

HIST 401 The Roman World (4, Fa) Rome at the crossroads of Europe and the Mediterranean; the rise of Rome to world power; social, cultural and political history of Republic and Empire.

HIST 402 Cultural Heritage, Religion, and Politics in the Middle East (4, Fa) (Enroll in REL 402)

HIST 403 Carolingian Europe (4) Political, religious, and intellectual culture of Europe in the 8th and 9th centuries.

HIST 404 Seminar in Korean History (4, Irregular) Exploration of issues and sources in Korean history; work on an individual research paper through an incremental process.

HIST 406 Special Periods in Medieval History (4, Irregular) Intensive study of selected periods.

HIST 407 Europe in the 10th Century (4) Political, religious, and intellectual culture of Europe in the 10th century and beyond.

HIST 408 Everyday Life in Chaucer's England (4, Sp) Readings and research on English social history between 1300 and 1550; emphasis on family structures, demography, gender relations, and class divisions.

HIST 409 The Norman Conquest of England, 1066 (4) Political, religious, and intellectual culture of England and the continent in the 11th and 12th centuries.

HIST 410 The Age of Humanism and Reformation (4, Irregular) The thought, art, politics, and religion of western Europe in the 16th and 17th centuries; emphasis on the contribution of Christian humanism.

HIST 413 The Age of Revolution (4, Irregular) The French and industrial revolutions and their interaction in 19th century Europe.

HIST 414 Contemporary Europe (4, Irregular) World War I and its aftermath; challenge of new culture values; World War II; problems of postwar adjustment.

HIST 415 Medieval and Early Modern Russia (4, 2 years, Fa) The politics, society, and culture of medieval and early modern Russia; the emergence of empire and the roots of its Eurasian identity.

HIST 416 History of Imperial Russia: 1689–1917 (4, Sp) The evolution of imperial society, politics and culture from Peter the Great to the Bolshevik Revolution. The dilemmas of identity in a multinational empire.

HIST 417 History of Soviet Russia: 1917–1991 (4, 2 years, Fa) The birth of the totalitarian regime, the emergence of the superpower and the socioeconomic, political and cultural developments that culminate in its demise.

HIST 419 Poland and Its Neighbors in the Middle Ages (4, 2 years, Sp) Polish politics, society, and culture in relation to its regional neighbors, especially Bohemia and Hungary, from the 10th to the end of the 15th century.

HIST 420 European Intellectual and Cultural History: The 19th Century, 1790–1870 (4) Intellectual and cultural trends of 19th century Europe, including Romanticism, Conservatism, Liberalism, Socialism and Evolutionary Theory.

HIST 421 European Intellectual and Cultural History: The Turn of the Century 1880–1920 (4) Intellectual and cultural trends of turn-of-the-century Europe, including the avant-garde, the crisis of positivism, psychoanalysis and gender theory.

HIST 422 European Intellectual and Cultural History: The 20th Century, 1920 to the Present (4, Irregular) Intellectual and cultural trends of contemporary Europe, including Dadaism, Surrealism, Western Marxism, Fascism, Existentialism and Structuralism.

HIST 424 Family, Work, and Leisure in Russian History (4, Irregular) Children and parents, love and marriage, work and leisure in the Russian village and city before and after the Revolution.

HIST 425 The Era of the First World War (4, FaSp) The background, causes, course, and aftermath of the First World War, with attention to the events in the United Kingdom and continental Europe.

HIST 426 Gender, Family, and Society in Europe and the United States, 1500–Present (4, 2 years, Sp) Changing social, economic, and cultural functions of the family and the roles of men, women, and children from pre-industrial times to the present in Europe and the United States.

HIST 427 The German Question: Nation and Identity in Modern Central Europe (4) A seminar on the making, unmaking and remaking of the German nation-state, with particular attention to issues of race, class and gender in German identity.

HIST 428 Life and Death in Nazi Germany (4) Social, cultural and medical history of Nazi Germany, emphasizing the Nazi vision of a racially pure national community. *Recommended preparation:* some European history.

HIST 429 Street Life: Urban Culture in Modern Europe (4, Sp) The 19th and 20th century European city as social artifact, cultural setting and object of fascination for its contemporary inhabitants.

HIST 432 Britain in the 18th Century (4) Political, social, and cultural aspects of British life from the accession of George I to about 1820.

HIST 437 Seminar in Modern Chinese History (4, max 8, FaSp) A readings and research seminar dealing with one topic in the history of China since 1600. Topics will change each time the course is offered. *Recommended preparation:* a class in Chinese history.

HIST 438 Seminar in Pre-Modern Japanese History (4, max 8, FaSp) A readings and research seminar dealing with one topic in the history of Japan before 1550. Topics will change each time the course is offered. *Recommended preparation:* a course in Japanese history.

HIST 440 Early Modern World History (4, Fa) Comparative patterns of historical change around the world, from ca. 1500 to ca. 1800.

HIST 441 Modern World History (4, Sp) Comparative patterns of historical change around the world, from ca. 1800 to the present.

HIST 443 Race and Religious Riots in Modern World History (4, FaSpSm) Origins of riots against Mexicans, Chinese, Jews and other minority groups in Asia, Europe, Australia and the Americas.

HIST 444 Mass Violence and Comparative Genocide in Modern World History (4) Systematic exploration of origins, developments, forms, and aftermath of mass murder of large population groups, one of the dark elements of modern world history.

HIST 445 Comparative History and Theory of Fascism and Nazism (4, Fa) Analysis and comparison of Italian Fascism and German Nazism in national and international contexts; recent historiographic debates.

HIST 446 Resistance to Genocide (4) Examination of theoretical approaches to and historical accounts of resistance to genocide. Students conduct original research on how people oppose or resist mass atrocities. *Recommended preparation:* course on the Holocaust or genocide.

HIST 451 The Mexican Revolution (4, 2 years, Sp) The roots, trajectory and outcome of the Mexican revolution of 1910.

HIST 452 Beauty and the Body in Historical Perspective (4, Sp) Cultural constructions of the body and beauty from gender, ethnicity, age, and disability perspectives in Europe and the United States from 1800 to the present.

HIST 453 The Age of Emancipation (4) Examines the evolution of racial status law in the long 19th century, with special emphasis on the relationship between slavery, segregation, and citizenship.

HIST 454 The World Pirates Made: Piracy and Privateering, 1500–1815 (4) Research seminar on history of piracy and its role in rise of modern state and nation. *Recommended preparation:* HIST 201.

HIST 455 Advanced Topics in African-American History (4, Sp) Exploration of African-American history through primary and secondary sources employing a colloquium format with an emphasis on shared responsibility for comprehensive discussion and analysis. Upper-division or graduate standing.

HIST 456 Race, Slavery, and the Making of the Atlantic World (4, FaSp) Introduction to the literature of the Atlantic World with a focus on slavery and its role in the emergence of the modern era. Seminar enrollment limited to 15 students.

HIST 457 The American West (4, Irregular) The nation's westward movement from Colonial times to the present, with emphasis on the frontier's effect on American life and institutions.

HIST 458 History of California (4, Fa) Exploration, colonization, and development of Hispanic California; coming of the Americans; political, economic, and cultural development of California since its acquisition by the United States.

HIST 461 19th Century American Thought (4, Fa) Major American thinkers from Emerson and Margaret Fuller to William James and W.E.B. DuBois, with emphasis on race, religion, politics, and gender.

HIST 462 20th Century American Thought (4, Fa) Major American thinkers from John Dewey and Jane Addams to Martin Luther King and Richard Rorty, with emphasis on race, religion, politics, and gender.

HIST 463 The Constitutional History of the United States (4) Historical influences on changes in the structure, practice, and interpretation of the American Constitution, including debates about institutional powers and civil/political rights and liberties. *Recommended preparation:* HIST 360 and HIST 361.

HIST 464 Culture, Money, and Power: Japanese-American Relations since 1853 (4, Sp) Examination of the role of cultural, economic, and military forces in shaping relations between two of the most important nations in the Asia/Pacific regions. *Recommended preparation:* HIST 363 or appropriate International Relations course.

HIST 465 America in the Cold War World, 1945–1991 (4, Fa) America's role in the Cold War and the impact of that conflict on its people, society and culture.

HIST 470 The Spanish Inquisition in the Early Modern Hispanic World (4, 2 years, Fa) The Spanish Inquisition in Spain and Colonial Latin America, major theories and interpretations. Junior or senior standing recommended.

HIST 473 Colonial Latin America Seminar (4, Sp) The history of colonial Latin America, focusing on the transformation of native Americans and Europeans into participants in a new colonial tradition. Upper-division standing. (Duplicates credit in former HIST 371.)

HIST 474 Sex, Gender, and Colonialism in Latin America, 1492 to 1820 (4, 2 years, Sp) Seminar overview of the historical literature on women, gender, and sexuality in colonial Latin America.

HIST 478 The United States, 1789–1850 (4, Irregular) The nation during the first six decades; development of American institutions; constitutional growth, expansion, sectionalism, and the Mexican War; the Compromise of 1850.

HIST 480 Seminar in Middle East History (4, max 8) A readings and research seminar dealing with one topic in the history of the Middle East. Topics will change each time the course is offered.

HIST 481 Producing Film Histories (4, Sp) History of film form and its institutions. Students will produce an original written or multimedia research project.

HIST 482 Jesus in American History and Culture (4, Sp) The place of Jesus Christ in diverse American cultures from colonial times to the present: Jesus as cultural icon, secular inspiration, Christian Son of God.

HIST 484 The United States, 1919–1939 (4, Irregular) Postwar reaction and the Twenties; the Great Depression and the New Deal; diplomacy between the wars.

HIST 487 The United States since 1939 (4, Irregular) A survey of the accelerating changes that transformed the nation's domestic life and revolutionized America's role in world affairs.

HIST 488 Teaching History in the Secondary Schools (4, Fa) Seminar in research methods, textbook and online research and teaching materials, and instructional approaches for teaching history in secondary schools.

HIST 490x Directed Research (1–8, max 12, FaSp) Individual research and readings. Not available for graduate credit.

HIST 492 Honors Thesis (4, Sp) Writing of the honors thesis; for students in the History Honors Program.

HIST 493 Quantitative Historical Analysis (4, Sp) Reading and doing quantitative research with historical data. Covers research designs, appropriate statistical analysis, and software packages for the use of historians.

HIST 494 Seminar in New Historical Writing (4, 2 years, Fa) Historical writing experiments combining historical specificity with more fluid approaches to time, characterization and objectivity associated with 20th century artists.

HIST 495 American Lives: Biography and Autobiography in the United States Past (4) The history of the United States seen through the lives of individuals, including Thomas Jefferson, Jane Addams, Malcolm X, and Marilyn Monroe.

HIST 497 Senior Seminar in Early Modern Studies (4, Sp) (Enroll in ENGL 497)

HIST 498 Seminar on Selected Historical Topics (4, max 8, FaSp) Advanced study in historical analysis and writing on selected topics and themes. Seminar enrollment limited to 15 students. *Recommended preparation:* HIST 201.

HIST 499 Special Topics (2–4, max 8, Irregular)

HIST 500 Introduction to Graduate Historical Studies (4, Fa) Techniques, theories, and sub-disciplines of history.

HIST 505 Studies in Early Medieval History (4, Irregular) Intensive study of subjects selected from the early Middle Ages, emphasizing source material, bibliography, and historiographic problems.

HIST 506 Studies in Later Medieval History (4, Irregular) Intensive study of subjects selected from the later Middle Ages, emphasizing source material, bibliography, and historiographic problems.

HIST 508 Studies in the Renaissance (4) Europe in the Renaissance: sources; secondary bibliography; and historiography.

HIST 509 Studies in the Reformation (4) Readings, reports, and discussions of major problems, issues, and interpretations of the Reformation.

HIST 510 Studies in Early Modern European History (4, Irregular) Readings of major interpretive studies on the 17th and 18th centuries.

HIST 511 Studies in Early Modern British History (4) Readings of major interpretive and historiographical studies on 16th and 17th century British history.

HIST 514 Studies in Modern European History, 1789–1914 (4, Fa) Readings and current bibliography in the history of Europe from the French Revolution to the outbreak of World War I; emphasis on cultural history approaches.

HIST 515 Studies in Modern European History: Europe's 20th Century (4, Fa) Readings in the history and historiography of Europe in the 20th century.

HIST 517 Studies in Russian History (4, Irregular) Readings, discussions, and student papers in modern Russian history.

HIST 520 Modernity and Its Visual Cultures (4, Sp) Western visual culture 1850–1930: historical background of changes in high and popular culture, technological reproducibility, display and spectacularization; recent literature and theoretical approaches.

HIST 525 Studies in British History (4, Irregular) Selected topics in English and British Empire history with emphasis on the 19th and 20th centuries.

HIST 534 Studies in Modern Japanese History (4) Selected topics and historiography of modern Japan. Open only to doctoral students.

HIST 535 Studies in Japanese History (4, Irregular) Selected topics in historical problems dealing with Japan.

HIST 536 Studies in Chinese History (2 or 4, Irregular) Selected topics in historical problems dealing with China. *Prerequisite:* HIST 340.

HIST 540 Studies in Modern East Asian History (4, max 8, Irregular) Readings and analysis of a particular theme in modern Asian history, focusing on broad comparative issues like cultural identity, colonialism, nationalism, revolution, or interstate relations.

HIST 544 Feminist Theory for Historians (4, Fa)

Readings in contemporary feminist theory, focused especially on theories that address the construction, writing, and general practice of history. Open only to graduate students.

HIST 546 Comparative History of Women and Gender in the West to 1800 (4, Fa)

Topically-focused readings in the comparative history of women and gender in Europe and the Americas before 1800. Open only to graduate students.

HIST 550 Studies in the History of Women, Gender and Sexuality (4, max 8, Irregular)

Readings and current bibliography in the history of women, gender and sexuality.

HIST 554 Readings in Chicano/Latino History (4, FaSp) (Enroll in AMST 554)

HIST 555 Studies in the American West (4) Zones of contact — physical, economic, political, ecological, symbolic, cultural, metaphorical — between peoples “west” of the Eurasian land mass since the rise of capitalist global expansion.

HIST 560 Transpacific History (4) Exploration of the connections and divergences in the Pacific region, 19th century to present. Topics include transnationalism, war, political economy, international relations, immigration, environmentalism, and race.

HIST 561 Historiography of Colonial Mexico (4, Fa)

Introduction to the historiography of Colonial Mexico from 1500 to 1821.

HIST 565 Studies in American International History (4, FaSm)

Readings and analyses of American policies, roles and principles in their interaction with peoples and nations of the world.

HIST 566 Historical Scholarship on North America to 1800 (4, Fa)

Introduction to research in the fields of American Indian, colonial America, Atlantic world, and the early United States. Open only to graduate students.

HIST 567 Historical Scholarship on 19th Century America (4, Sp)

Introduction to historiography and research in the political, economic, social, cultural, and intellectual history of the 19th century United States.

HIST 568 Historical Scholarship on 20th and 21st Century America (4, Sp)

Introduction to historiography and research in the political, economic, social, cultural, and intellectual history of the 20th and 21st century United States.

HIST 575 Studies in 19th Century United States History (4, max 8, 2 years, Fa)

Intensive readings and bibliography in the Early National, Jacksonian, Civil War, and Post-Civil War periods.

HIST 583 Studies in Urban History (4)

Readings and analyses in the rise of the city and the impact of urbanization from the colonial era to the present.

HIST 584 Seminar in American Social History (4, Irregular)

Creation of communities and societies; industrialization, urbanization, working class life; families, women, ethnicity; immigration; racism; mobility; reform and radicalism, leisure.

HIST 585 Studies in 20th Century American History (4)

Readings and analyses in social and political problems, movements, and issues.

HIST 587 Studies in the Politics of American Popular Culture (4)

Selected themes, theories, and key works in the politics of American popular culture.

HIST 590 Directed Research (1–12, FaSpSm)

Research leading to the master’s degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

HIST 592 Historiography (4, Sm)

Historical criticism; form and mechanics of presenting research; writers of history, their works and philosophies; theories of historical development.

HIST 593 The Art of Historical Writing (4, Sp)

An analysis of conventional forms of historical representation and the artistic and scientific challenges to them. Laboratory training in innovative forms of historical writing will be stressed.

HIST 594abz Master’s Thesis (2-2-0, FaSp)

Credit on acceptance of thesis. Graded IP/CR/NC.

HIST 595 Practicum in Teaching the Liberal Arts (2, FaSp)

(Enroll in MDA 593)

HIST 602 Seminar in Ancient History (2 or 4, max 8, Irregular)

Directed research in historical problems.

HIST 605 Seminar in Medieval European History (2 or 4, max 8, Irregular)

Directed research in historical problems.

HIST 608 Seminar on Premodern Europe (4, max 8)

Directed research on topics from late antiquity to the 18th century. Students will work with both their faculty advisers and the course instructor.

HIST 610 Seminar in Early Modern European History (2 or 4, max 8, Irregular)

Directed research in historical problems concerning the 17th and 18th centuries.

HIST 615 Seminar in Modern European History (2 or 4, max 8, Irregular)

Directed research in historical problems dealing with Europe since 1789.

HIST 617 Seminar in Russian History (2 or 4, max 8, Irregular)

Directed research in historical problems.

HIST 620 Research Seminar on Modern Visual Culture (4, Fa)

A research seminar focusing on Western visual culture since the mid-18th century. *Recommended preparation:* HIST 520.

HIST 630 Seminar in Japanese History (2 or 4, max 8, Irregular)

Directed research in historical problems.

HIST 635 Seminar in Chinese History (2 or 4, max 8, Irregular)

Directed research in historical problems. *Prerequisite:* HIST 340.

HIST 650 Seminar on Women’s and Family History (4, max 8, Sp)

Readings, discussions, and directed research on women’s and family histories.

HIST 655 Seminar in Western American History (2 or 4, max 8)

Selected topics in the history of the American frontier and the West.

HIST 660 Research Seminar on Transpacific Studies (4, FaSp)

(Enroll in AMST 622)

HIST 670 Illness and Healing in the Modern World (4, Sp)

Illness and healing in Europe and the Americas since 1492, especially the changing clinical and cultural definitions and responses to disease and ailments.

HIST 673 Seminar in Early North American History (4, max 8)

Primary research on issues related to the history of the colonial and early national periods with an emphasis on areas that became the United States.

HIST 675 Seminar in 19th Century United States History (4, max 8, 2 years, Sp)

Research in historical problems of the Antebellum, Civil War, and Post-Civil War periods.

HIST 680 Seminar in 20th Century United States History (4, max 8, 2 years, Fa)

Directed research in historical problems of the Reform, World War I, interwar, World War II, and Post-War periods.

HIST 700 Historical Explanation and Research Design (4)

Designed for all doctoral candidates in their last year of course work, this practicum helps students define a dissertation topic and produce a prospectus. Graded CR/NC. Open only to graduate students.

HIST 790 Research (1–12, FaSpSm)

Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

HIST 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSp)

Credit on acceptance of dissertation. Graded IP/CR/NC.

Interdisciplinary Studies

College Academic Services Building

(213) 740-2961

FAX: (213) 740-4839

Email: fliegel@college.usc.edu

dornsife.usc.edu/interdisciplinary-studies

Faculty Director: Thomas Gustafson, Ph.D.

Director: Richard Fliegel, Ph.D.

Interdisciplinary Major

The interdisciplinary major allows students to create an individual, original major. It is a flexible option available when a combination of existing majors and academic minors does not adequately fulfill a student's educational goals. With close advisement, students can build their own programs of study.

The interdisciplinary major is an intensive research program for students with a focused interest in a topic that requires study from more than one disciplinary perspective. Interdisciplinary majors are usually self-motivated students with good writing skills and an intellectual passion for a particular area of inquiry. Course work is selected to lead to a thesis project integrating the areas of research comprising the interdisciplinary major.

Admission

Admission to the interdisciplinary major is by application. Applications, which may be obtained from the program office, are considered by a special admissions committee. Interested students must have a GPA of 3.0 (A = 4.0) or above; those with less than a 3.3 are the exception. No one is usually admitted after the end of the first semester of the junior year.

Program Requirements

Students in the program must meet all graduation requirements of the college. When admitted, students establish an academic "contract," which outlines each semester's course of study through graduation. The contract includes a minimum of nine (four unit) upper-division courses, distributed in at least two fields. The primary focus of the major should be in the USC Dornsife College of Letters, Arts and Sciences. These areas of concentration must then be combined in a senior thesis or project, written under the guidance of a faculty committee.

Restrictions

Course prerequisites cannot be waived; admission to courses restricted to majors is subject to availability and direct negotiations; admission to departments and/or schools which have their own admission requirements must be processed separately.

Bachelor of Arts in Narrative Studies

See English, page 338xx, for a full description of the major.

Minor in Critical Approaches to Leadership

This minor is offered by faculty from several disciplines whose perspectives are brought to bear on issues and questions that should inform the judgements of capable, ethical leaders. Students are introduced to theoretical and historical models of leadership, engage in case studies of modern leaders, select critical electives that explore ethical and social considerations of leadership, examine professional applications of leadership principles, and integrate what they have learned in a capstone course. The emphasis of the minor is on leadership as expertise in community-building and takes advantage of USC's programs in community service, including the Joint Educational Project, the Jesse M. Unruh Institute of Politics and other internships available through the Division of Student Affairs.

Five upper-division courses, totaling 20 units, are required.

CORE COURSES		UNITS
Choose two:		
CLAS 370	Leaders and Communities	4
CLAS 375	Alexander the Great: Leadership, Personality and World Conquest	4
PHIL 335	Theoretical Models of Leadership	4
MDA 325	Case Studies in Modern Leadership	4

CRITICAL ELECTIVES		UNITS
<i>Group A — choose one</i>		
PHIL 337	History of Modern Political Philosophy	4
PHIL 437	Social and Political Philosophy	4
PSYC 355	Social Psychology	4
REL 341	Ethics in a Technological Society	4
REL 360	Ethical Issues in the New Medical Revolution	4
REL 375	Conflict and Change and the Ethics of Business	4
SOCI 320	Social Psychology	4

Group B — choose one

IR 303	Leadership and Diplomacy	4
MOR 470	Global Leadership	4
POSC 365	World Political Leadership	4
POSC 423	Presidents and the Presidency	4

CAPSTONE COURSE		UNITS
AMST 365	Leadership in the Community, or	4
MDA 365	The Art and Adventure of Leadership, or	
MDA 475	The Future of California	

Courses of Instruction

INTERDISCIPLINARY MAJOR PROGRAM (INDS)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

INDS 100 Topical and Multidisciplinary Seminars (1-4, max 12, FaSp) Small group investigation from an interdisciplinary perspective.

INDS 101 Directed Research and Tutorials (1-4, FaSp) Research and study with L.A.S. Faculty Associates and other faculty.

INDS 102 Field Study (1-4, FaSp) In-service experience in a variety of off-campus institutions under the supervision of an L.A.S. Faculty Associate.

INDS 300 Topical and Multidisciplinary Seminars (1-4, max 12, FaSp) See INDS 100 for description.

INDS 301 Directed Research and Tutorials (1-4, FaSp) See INDS 101 for description.

INDS 302 Field Study (1-4, FaSp) See INDS 102 for description.

INDS 400 Topical and Multidisciplinary Seminars (1-4, max 12, FaSp) See INDS 100 for description.

INDS 401 Directed Research and Tutorials (1-4, FaSp) See INDS 101 for description.

INDS 402 Field Study (1-4, FaSp) See INDS 102 for description.

INDS 494 Senior Thesis (1-8, FaSp) Writing the IDM senior thesis under the supervision of a faculty qualifying exam committee.

International Relations

Von KleinSmid Center 330
(213) 740-6278; 740-2136
FAX: (213) 742-0281
Email: sir@dornsife.usc.edu
dornsife.usc.edu/sir

Director: Robert English, Ph.D.

Faculty

Robert R. and Katheryn A. Dockson Chair in Economics and International Relations: Joshua Aizenman, Ph.D.

John A. McCone Chair in International Relations and Professor of International Relations and Law: Wayne Sandholtz, Ph.D.

Robert Grandford Wright Professor in International Relations: Laurie A. Brand, Ph.D.*

Dean's Professor of International Relations: Patrick James, Ph.D.*

Professors: Jonathan D. Aronson, Ph.D.* (*Communication*); Manuel Castells, Ph.D. (*Communication*); Nicholas Cull, Ph.D. (*Communication*); David Kang, Ph.D.; Steven L. Lamy, Ph.D.*; Gerardo Munck, Ph.D.; Michael Parks (*Communication*); Philip Seib, J.D. (*Communication*); Mary Elise Sarotte, Ph.D.; Edwin M. Smith, J.D. (*Law*)

Associate Professors: Robert English, Ph.D.; Jacques Hymans, Ph.D.; Saori N. Katada, Ph.D.; Daniel Lynch, Ph.D.; Brian Rathbun, Ph.D.; Carol Wise, Ph.D.

Assistant Professors: Andrew Coe, Ph.D.; Benjamin Graham, Ph.D.; Nicholas Weller, Ph.D. (*Political Science*)

Professor of the Practice of International Relations and Economics: Lord John Eatwell, Ph.D.

Professor of the Practice of International Relations: Geoffrey Wiseman, Ph.D.

Associate Professor (Teaching) of International Relations: Pamela K. Starr, Ph.D.

Assistant Professors (Teaching) of International Relations: Douglas Becker, Ph.D.; Andrew Manning, Ph.D.; Nina Rathbun, Ph.D.

Emeriti Professors: Peter A. Berton, Ph.D.*; Michael G. Fry, Ph.D.; Abraham F. Lowenthal, Ph.D.; John S. Odell, Ph.D.; Ron Steel, M.A.; Rodger Swearingen, Ph.D.; J. Ann Tickner, Ph.D.

Emeritus Professor of the Practice: Gary W. Glass, Ph.D.

*Recipient of university-wide or college award for teaching or research.

Degree Programs

The School of International Relations (SIR) offers a B.A. in international relations; a B.A. in international relations

(global business); a progressive degree in international relations; a dual M.A. in international relations/Juris Doctor offered with the USC Gould School of Law; a Master of Public Diplomacy; and a Ph.D. in politics and international relations offered with the Political Science Department. The SIR also offers minors in global communication, international relations, international policy and management and international urban development.

The SIR encourages undergraduate double majors, especially with economics, environmental studies, geography, history, journalism, foreign languages, political science and sociology. Programs are flexible, allowing students to gain a broad background in international studies and, at the same time, to specialize in a particular area. Minors in international relations; international policy and management; international urban development; and global communication, as well as interdisciplinary minors in nonprofits, philanthropy and volunteerism; and Russian area studies are also offered.

Undergraduate Degree

Major Requirements for the Bachelor of Arts in International Relations

The International Relations major requires a minimum of 48 units. All majors must complete IR 210 International Relations: Introductory Analysis and IR 212 Historical Approaches to International Relations in the first year. All majors must complete IR 211 International Relations: Approaches to Research and IR 213 The Global Economy in their second year. IR 210 is a corequisite for IR 212, and a prerequisite for IR 211 and IR 213. IR 210 should be completed before attempting 400-level courses.

Four semesters of a single foreign language are required. All majors are encouraged to obtain as much foreign language training as possible either through a major or a minor in a foreign language or through a study program abroad.

Beyond IR 210, IR 211, IR 212 and IR 213, international relations majors are required to take eight additional courses. Majors must choose two, three-course concentrations. One of these should be from the following: Culture, Gender and a Global Society; Foreign Policy Analysis; International Political Economy; International Politics and Security Studies; Regional Studies (Europe; Russia, Eastern Europe and Eurasia; Latin America; the Middle East and Africa; or Pacific Rim). The student may design the second concentration with the support of a regular faculty member and approved by the International Relations Curriculum Committee. Every concentration must include at least one international relations course, typically the introductory course.

International Politics and Security Studies

War and peace are at the heart of relations among nations. These courses investigate defense analysis, arms control, peace-building and strategic studies. The domestic, technological and international factors influencing defense and arms control policies and negotiations are considered. The World Wars, Korea, Vietnam and the numerous crises of the Cold War are the backdrop in these courses. Required course: IR 307 or IR 381. Additional courses are: IR 303, IR 304, IR 309, IR

310, IR 318, IR 382, IR 383, IR 384, IR 385, IR 386, IR 402, IR 403, IR 422, IR 427, IR 445, IR 483, POSC 366 and POSC 448ab.

International Political Economy

These courses focus on what used to be considered "low" politics, but which have become key issues. Money, trade, investment, development, the environment and foreign economic policy are examined. Required course: IR 330. Additional courses are: ECON 338, ECON 450, ECON 452, IR 305, IR 309, IR 323, IR 324, IR 325, IR 326, IR 337, IR 363, IR 364, IR 439, IR 454, POSC 430 and POSC 431.

Foreign Policy Analysis

This area examines the external relations of states, particularly the domestic and international factors that influence the formulation and implementation of national foreign policies. Factors within states (leadership, small group dynamics and domestic lobbying groups) and factors between states are stressed. Required course: IR 341 or IR 343. Additional courses are: IR 303, IR 309, IR 346, IR 365, IR 368, IR 385, IR 403, IR 441, IR 442, IR 443, IR 445 and IR 465.

Regional Studies

The regional studies field focuses on geographic regions, such as the Pacific Rim, Latin America, Europe, the Middle East and Africa. These courses test general theories of international relations within the framework of a specific region. The economic, political, ethnic and social history of a region are examined to help explain current developments and interstate and domestic policies and issues within a region.

Europe: Required course: IR 369. Additional courses are: ANTH 326, FREN 400, FREN 410, GERM 465, HIST 312, HIST 313, HIST 332, HIST 414, HIST 422, HIST 427, HIST 434, IR 368, IR 369, IR 385, IR 468, POSC 370, POSC 371, POSC 463, SPAN 320 and SPAN 350.

Russia, Eastern Europe and Eurasia: Required course: IR 345. Additional courses are: HIST 320, HIST 328, HIST 416, IR 346, IR 438, IR 439, POSC 464 and SLL 330.

Latin America: Required course: IR 364. Additional courses are: ANTH 328, ANTH 425, GEOG 335, HIST 372, HIST 374, IR 337, IR 365, IR 366, IR 465, IR 466, POSC 350, POSC 430, POSC 431, SPAN 320 and SPAN 481.

The Middle East and Africa: Required course: IR 362 or IR 367. Additional courses are: ANTH 327, ECON 342, IR 362, IR 363, IR 364, IR 463 and POSC 351.

Pacific Rim: Required course: IR 358 or IR 360. Additional courses are: ANTH 323, ANTH 324, EALC 340, EALC 345, EALC 350, EALC 375, ECON 343, HIST 333, HIST 337, HIST 340, IR 333, IR 361, IR 384, IR 442, POSC 352, POSC 355, POSC 356, POSC 377 and POSC 453.

Culture, Gender and Global Society

This field explores identities and interests shaping the politics of intellectual global society. Required course:

IR 305 or IR 316. Additional courses are: EALC 375, IR 303, IR 306, IR 309, IR 310, IR 315, IR 318, IR 344, IR 382, IR 403, IR 406, IR 422, IR 424, IR 438, IR 444, POSC 456, PPD 382, SOCI 335, SOCI 435, SOCI 445, SOCI 460 and SOCI 470.

If a student chooses a regional studies concentration, then his or her foreign language requirement should be in a language appropriate to that region. Four semesters of a single foreign language are required. Foreign language units do not count toward the minimum total of 40 units for the international relations major.

The student must take at least 32 units of international relations courses, including the two 200-level IR courses. Additionally, he or she must take at least eight upper-division courses from the above curriculum, including at least one regional course and one 400-level course.

Honors Program

The honors program centers around IR 494 Honors Thesis Seminar that culminates in a thesis based on original research. In the spring of the junior year, students who have earned a GPA of 3.5 in the major and an overall GPA of 3.3 submit an application, two letters of recommendation and a research proposal that identifies the thesis topic to the student affairs office. Upon admission to the program, the student identifies an appropriate faculty member to co-supervise the thesis and, in the fall of the senior year, enrolls in IR 494. If the program is completed successfully (a B+ or better in IR 494, a major GPA of 3.5 and an overall GPA of 3.3 [A = 4.0]), the transcript will read "with Honors."

Bachelor of Arts in International Relations (Global Business)

The B.A. in International Relations with an emphasis in Global Business will give students the opportunity to pursue a degree in international relations and acquire specific skills in one of four concentrations in international business: international finance, international financial management, global marketing or global management. Students who have earned a GPA of 3.0 or above and a "B" average in IR 210 International Relations: Introductory Analysis and a second 300-level or above IR course are eligible to apply during their sophomore year. In addition to the IR requirements, students need to complete the following prerequisite courses: ECON 203 Principles of Microeconomics or ECON 351x Microeconomics for Business, ECON 205 Principles of Macroeconomics or ECON 352x Macroeconomics for Business and MATH 118x Fundamental Principles of the Calculus before they can begin this program. The international relations course work consists of 28 units: IR 210, a regional course, a 400-level course, an international political economy course (IR 324, IR 325, IR 326 or IR 330) and three upper-division electives.

Course work at the USC Marshall School of Business consists of ACCT 410x Accounting I Core Concepts of Accounting Information and 20 units in the respective areas of concentration. *International finance*: BUAD 215x Foundations of Business Finance or BUAD 306 Business Finance, BUAD 310 Applied Business Statistics, BUAD 350 Macroeconomic Analysis for Business Decisions or ECON 305 Intermediate Macroeconomic Theory, FBE 462 International Trade and Commercial

Policy and FBE 464 International Finance; *international financial management*: BUAD 215x Foundations of Business Finance or BUAD 306 Business Finance, BUAD 310 Applied Business Statistics, FBE 432 Corporate Financial Strategy, FBE 436 Financial Management of Multinational Corporations, FBE 462 International Trade and Commercial Policy; *global marketing*: BUAD 307 Marketing Fundamentals, BUAD 310 Applied Business Statistics, MKT 450 Consumer Behavior and Marketing, MKT 465 Global Marketing Management and MKT 470 Marketing Research; *global management*: BUAD 304 Leading Organizations, MOR 431 Interpersonal Competence and Development, MOR 462 Management Consulting, MOR 470 Global Leadership and MOR 492 Global Strategy.

Bachelor of Science in Global Health Studies

The Bachelor of Science in Global Health Studies is a multidisciplinary degree of the Keck School of Medicine's Department of Preventive Medicine. Students complete course work in Health Promotion and Disease Prevention Studies. For degree requirements, see Preventive Medicine, page 792xx.

Progressive Degree Program in International Relations

This progressive degree program permits superior students to complete all requirements for both the B.A. and the M.A. degrees in international relations in five years. Students may apply on completion of 64 units of course work, but not later than the end of their junior year (or the completion of 96 units). To be eligible for admission, students must have at least a 3.5 overall GPA and a 3.75 major GPA and must have completed IR 210 International Relations: Introductory Analysis and IR 211 International Relations: Approaches to Research, or equivalent courses, as well as at least two upper-division IR courses with at least one at the 400 level. The application for admission to a progressive degree program must be accompanied by an approved course plan proposal and letters of recommendation from two USC faculty members in the School of International Relations. The requirements for both the B.A. and M.A. degrees must be satisfied. Further details about progressive degrees can be found on page 87xx.

Students enrolled in a progressive degree program are encouraged to pursue minors in either foreign language, economics, public policy or regional studies to attain regional and functional expertise in addition to their training in international relations.

Minor in International Relations

The minor in international relations allows students to develop a specialty in the field without a full major. Requirements are: IR 210 International Relations: Introductory Analysis and four upper-division courses including at least one regional course and one 400-level course. Students planning to minor in international relations should see the School of International Relations advisers in Von KleinSmid Center 301.

Minor in Global Communication

The rise of global firms and international changes that followed the end of the cold war raise new opportunities and challenges. This minor provides students from fields such as business, journalism, engineering and

political science an understanding of the dynamic nature of global relations, communications and technology. The global communication minor consists of six 4-unit courses, three from International Relations and three from Communication.

REQUIRED INTERNATIONAL RELATIONS COURSE		UNITS
IR 305	Managing New Global Challenges	4

INTERNATIONAL RELATIONS REGIONAL COURSES (SELECT ONE)		UNITS
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IR 303	Leadership and Diplomacy	4
IR 325	Rich and Poor States in the World Political Economy (departmental approval)	4
IR 326	U.S. Foreign Economic Policy	4
IR 327	International Negotiation	4
IR 330	Politics of the World Economy	4
IR 333	China in International Affairs	4
IR 345	Russian and Soviet Foreign Policy	4
IR 360	International Relations of the Pacific Rim	4
IR 361	South and Southeast Asia in International Relations	4
IR 362	The International Relations of the Contemporary Middle East	4
IR 363	Middle East Political Economy	4
IR 365	Politics and Democracy in Latin America	4
IR 367	Africa in International Affairs	4
IR 368	French Foreign Policy: 1945 to the Present (offered in Paris only)	4
IR 369	Contemporary European International Relations	4
IR 383	Third World Negotiations	4
IR 384	Introduction to Asian Security	4
IR 385	European Foreign Policy and Security Issues	4
IR 403	Transnational Diplomacy and Global Security	4
IR 439	Political Economy of Russia and Eurasia	4
IR 442	Japanese Foreign Policy	4
IR 468	European Integration	4

IR ELECTIVE

Select one 300- or 400-level IR course

REQUIRED COMMUNICATION COURSE		UNITS
COMM 487	Communication and Global Organizations	4

COMMUNICATION ELECTIVES (SELECT TWO)		UNITS
COMM 324	Intercultural Communication	4
COMM 339	Communication Technology and Culture	4
COMM 345	Social and Economic Implications of Communication Technologies	4
COMM 371	Censorship and the Law: From the Press to Cyberspace	4

COMM 385	Survey of Organizational Communication	4
COMM 414	Communication and Social Change in China	4
COMM 430	Global Entertainment (Prerequisite: COMM 300)	4
COMM 431	Global Strategy for the Communications Industry	4

Total units: 24

Minor in International Policy and Management

The minor in international policy and management brings together courses from the School of International Relations, dealing with the new global challenges, specific regions of the world and international organizations and policies, and the USC Price School of Public Policy dealing with core management skills and public policy processes. Students will gain an understanding of the changes and challenges transforming the world and a taste of the policy and management skills to deal with them. To increase their understanding of the context and application of these concepts, students must complete a semester-long internship either in Washington, D.C. or Los Angeles with an organization that has an international focus.

Students take three courses in international relations, including the gateway course, IR 305 Managing New Global Challenges, three courses in public policy and management, and an approved internship through the School of International Relations (IR 491x).

Required Courses from International Relations:

IR 305; one regional course selected from: IR 333, IR 345, IR 358, IR 360, 361, IR 362, IR 363, IR 365, IR 367, IR 369, IR 383, IR 385, IR 439, IR 442, IR 468; one course from either the regional course list or the following: IR 306, IR 307, IR 310, IR 315, IR 316, IR 318, IR 323, IR 324, IR 325, IR 326, IR 327, IR 330, IR 341, IR 343, IR 344, IR 381, IR 382, IR 427, IR 441, IR 444.

The public policy component requires the completion of the following three options:

From Public Policy: PPD 225; two additional courses from the following: PPD 357, PPD 371, PPD 373, PPD 476 or PPD 482; or from **Public Management:** PPD 402; two additional courses from the following: PPD 313, PPD 407, PPD 411a, PPD 476.

Internship

Each student is required to complete an approved internship with an international focus. Students take a two-unit internship through the School of International Relations (IR 491).

Interdisciplinary Nonprofits, Philanthropy and Volunteerism Minor

See the USC Price School of Public Policy, page 875xx.

Interdisciplinary Russian Area Studies Minor

See Department of Slavic Languages and Literatures, page 466xx.

Advisement

Advisement is required for all majors and minors. Students are encouraged to meet with School of International Relations advisers at least once a semester to review the direction of their individual programs. Students are also encouraged to seek the advisement of faculty members whose specializations are appropriate to their programs of study.

Academic Specialization

Students majoring in international relations who wish to develop their own specialization or emphasize a particular regional area may establish with a faculty adviser, or with School of International Relations advisers, an academic program that will accomplish the students' objectives.

Graduate Degrees

The School of International Relations offers graduate curricula leading to several different graduate degrees. With courses and faculty renowned for their strengths in a great variety of fields — culture, gender and globalization, political economy, foreign policy and security, regional studies — our graduate international programs generally emphasize training for careers in advanced research and teaching. The school also welcomes professionally oriented students with related interests in fields such as law, communication, economics and business and public policy.

The School of International Relations has programs leading to a progressive B.A./M.A. in international relations; a dual M.A. in international relations/Juris Doctor offered with the USC Gould School of Law; a dual M.A. in international relations/Master of Planning and M.A. in international relations/Master of Public Administration offered with the USC Price School of Public Policy; Master of Public Diplomacy; and a Ph.D. in political science and international relations offered with the Political Science Department.

Admission Requirements

The School of International Relations welcomes talented candidates from a variety of academic backgrounds. Admission decisions are based on consideration of applicants' prior academic performance, as reflected in course grades and letters of recommendation. Applicants also are strongly encouraged to submit a sample of their written work in English, preferably a research-oriented paper. The committee also considers the potential for success in a graduate program based on Graduate Record Examinations scores. Business, government and other practical experiences related to international relations also are taken into account.

It is strongly recommended that master's and doctoral degree candidates should have completed at least one undergraduate course in statistics or quantitative methods and at least one course in economics before enrolling for graduate study. A course in social or political theory or international history also is highly desirable. The faculty may admit promising students who lack one or more of these courses. Students with this preparation tend to be more successful in the program and more likely to prosper in an academic or research setting afterwards.

Degree Requirements

These degrees are under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue (page 97xx) for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School.

All graduate students are required to maintain regular contact with the graduate coordinator to assure compliance with departmental regulations.

Foreign Language Requirement

Students in the progressive B.A./M.A. and joint M.A./J.D., M.A./MPL and M.A./MPA master's programs must show proficiency in at least one foreign language at the fourth semester level. In special instances a doctoral student's dissertation guidance committee may require a student to show research competence in one or two foreign languages. International students whose native language is not English may satisfy this requirement by submitting proof of their ability to read and understand social science materials in their native language where appropriate, or in another language in which significant social science material is available.

Substantive Paper Requirement

Students in the progressive B.A./M.A. and joint M.A./J.D., M.A./MPL and M.A./MPA master's programs must submit a substantive paper or alternative project. This requirement is meant to encourage students to polish articles that may ultimately prove suitable for publication, to develop materials that will display their talents for doctoral and graduate school admission committees or prospective employers, and to begin to develop dissertation proposals early in the graduate education process. A student may submit a revised version of a research paper or a detailed policy memorandum along with a copy of the original paper for which he or she received a grade of B+ or better in one international relations graduate class. Students may also submit a paper or project based on other original work. A two-person faculty examining committee, which must consist of School of International Relations faculty members, will evaluate the substantive paper or project and may, at their discretion, call the student for an oral examination on the project. The student may add a third outside member to the committee. They may also choose to examine the student on his or her course work in international relations.

Master of Arts, International Relations Requirements

Students who have the degree objective of joint M.A. programs (Master of Arts, International Relations/Juris Doctor; Master of Arts, International Relations/Master of Planning; and Master of Arts, International Relations/Master of Public Administration) must apply for an M.A. in International Relations. Students pursuing these joint programs must refer to the specific course requirements outlined for each program.

Advisement

Students should consult with the school's faculty adviser each semester before registering for courses for the next semester. Students also are encouraged to seek advice from other faculty who work in areas

related to their interests. Students may, if they wish and if a faculty member agrees, select a different faculty adviser from among the school's faculty. Consult with and inform the Office of Student Affairs regarding changes in faculty advisers.

Master of Arts, Political Science and International Relations

Only students who have a degree objective of obtaining the Ph.D. will be admitted into the Political Science and International Relations program. However, interested students can obtain an M.A. degree while pursuing the Ph.D. The degree is awarded upon successful completion of (a) 28 units, including three of the five courses in the program's theory and methodology sequence, a master's thesis and registration in POSC 594ab or IR 594ab; and (b) the approval of the master's thesis by the thesis committee.

Master of Arts, International Relations/Juris Doctor

The USC Gould School of Law and the School of International Relations jointly offer a three-year program leading to the J.D. and M.A. degrees. (Students may extend the dual degree program to four years.) Applicants must apply to both the law school and the School of International Relations and meet requirements for admission to both. In addition to the LSAT, students interested in this program are required to take the Graduate Record Examinations (GRE). Law students may apply to the School of International Relations during their first year at the law school.

In the first year, students take their course work in the law school exclusively. The second and third years include 24 units of courses in international relations and 40 units of law. Students pursuing the dual degree must complete LAW 662 or LAW 764 and one additional international law course. To earn the J.D., all students (including dual degree students) must complete 35 numerically graded law units at USC after the first year. The associate dean may make exceptions to this rule for students enrolled in law school honors programs.

Students pursuing the dual degree must complete 24 units within the School of International Relations at the 500 level or above. These students are required to successfully complete IR 500 International Relations Theory, either IR 513 Social Science and Historical Research Methods or IR 517 International Policy Analysis, and two domain courses selected from among IR 502 Conflict and Cooperation, IR 509 Culture, Gender, and Global Society, IR 521 Introduction to Foreign Policy Analysis and IR 541 Politics of the World Economy. Like all other international relations master's degree programs, students in the dual degree program must complete a substantive paper or alternative project. The requirements, standards and evaluation procedure for the substantive paper are identical to those listed above for all M.A. students except that one member of the examining committee must come from the law school.

Master of Public Diplomacy and Master of Public Diplomacy (Practitioner and Mid-Career Professional)

These degrees combine the resources of the USC Annenberg School for Communication and Journalism and USC Dornsife College of Letters, Arts and Sciences'

School of International Relations. The Master of Public Diplomacy is designed for students who already have a substantial undergraduate background in social sciences or relevant professional experience in subjects such as communication, film and media studies, journalism, political science, public relations and international relations. The Master of Public Diplomacy (Practitioner and Mid-Career Professional) is designed for students who have at least five years experience working in public diplomacy. See Annenberg School for Communication and Journalism, page 498xx, for degree requirements.

Doctor of Philosophy in Political Science and International Relations

See Political Science and International Relations, page 445xx, for degree requirements.

Courses of Instruction

INTERNATIONAL RELATIONS (IR)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

IR 100xg The United States and World Affairs (4)

The changing character of contemporary international political issues from the Cold War to the future and U.S. foreign policy options for the future; exploration of competing perspectives. Not available for major credit. *Concurrent enrollment*: WRIT 140.

IR 101xg International Relations (4)

Basic concepts of world affairs for non-majors. Development of competency to understand and critically evaluate global relations and international events, stressing empirical approaches. Not available for major credit. *Concurrent enrollment*: WRIT 140.

IR 210 International Relations: Introductory Analysis (4)

Comprehensive introduction to contending theoretical and analytical approaches; development of critical, evaluative, cognitive, and analytical competencies regarding historical and contemporary issues. (Required for all IR majors and minors.)

IR 211 International Relations: Approaches to Research (4)

Introduction to theoretically oriented research approaches and designs, emphasizing the logics of argumentation involved. (Required for all IR majors.) *Prerequisite*: IR 210.

IR 212 Historical Approaches to International Relations (4)

Introduction to historical research methods, emphasizing historical texts and modes of discourse. *Prerequisite*: IR 210.

IR 213 The Global Economy (4)

Economic concepts necessary to understand modern global economy. Topics include transition economies, global inequality, environmental issues, international political economy, trade and the international financial system. *Prerequisite*: IR 210.

IR 302 International Relations of the Great Powers in the Late 19th and 20th Centuries (4)

Introductory analysis of the interactions of the great powers during the period; initial focus on Europe, with expansion to include global relations.

IR 303 Leadership and Diplomacy (4)

The role of leaders, diplomatic leadership and creativity in statecraft, providing a deep understanding of the theoretical and practical dimensions of diplomacy.

IR 304 Espionage and Intelligence (4)

The role and evolution of espionage and intelligence as tools of statecraft are examined. Open, covert, clandestine, counterintelligence programs and oversight processes are considered.

IR 305 Managing New Global Challenges (4)

Examines strategies for managing global issues in the post Cold War period. Explores ways that international institutions, national governments and non-state actors work separately and together to provide order and control over complex international issues areas. Issues that will receive attention could include financial and monetary relations, trade and foreign investment, preservation of the environment, the spread of weapons of mass destruction, population and migration, terrorism and ethnic strife.

IR 306 International Organizations (4)

The emergence of international organizations as a permanent feature in world politics; role of the United Nations organization as well as regional international organizations.

IR 307 Contemporary International Politics (4)

Recent events, forces, and conditions in the international political system. Basic organizing concepts used in the analysis of the data of international politics.

IR 308 Globalization: Issues and Controversies (4)

People, money, things, information, and ideas flow across national borders. How can we understand globalization, its consequences, and how to manage it? Multimedia training is provided.

IR 309 Global Governance (4)

Introduction to global governance structure and institutions. Exploration of the appropriate role for states, international organizations, civil society and individuals within the global governance structure.

IR 310 Introduction to Peace and Conflict Studies (4)

Interdisciplinary study of the pursuit of peace, including causes of wars, arms races, conflict resolution, peace movements, domestic violence, nonviolent resistance, and peace with justice.

IR 313 Religions and Political Violence (4)

An introduction to debates about the intersection of religion and conflict in politics and international affairs; theoretical, classical, and contemporary issues.

IR 315 Ethnicity and Nationalism in World Politics (4)

Ethnic identity and nation formation in the global society of states; nation-states; conflict or political accommodation within multinational states; impact of dispersed nations on interstate relations.

IR 316 Gender and Global Issues (4)

An examination of the role women have played in world politics focusing on issues of war and peace, the environment and the global economy.

IR 318 Conflict Resolution and Peace Research (4)

Processes of conflict, violence, change, integration, stability, and peace in world society, analyzed primarily through the literature of the peace research movement.

IR 323 Politics of Global Environment (4)

Examines the politics of managing the global environment. The nature of ecosystems, common problems, population and resource utilization problems along with biodiversity and global governance are emphasized.

IR 324 Multinational Enterprises and World Politics (4)

Political implications of interactions between different types of multinational enterprises and all levels of U.S. government, other industrial nations, and less-developed countries.

IR 325 Rich and Poor States in the World Political Economy (4)

Dynamic inequality in relations between rich and poor; contending views on causes; legacies of imperialism; ameliorative strategies of poor states; responses of richer states.

IR 326 U.S. Foreign Economic Policy (4)

The U.S. economy and political-economic institutions in comparative perspective; economic diplomacy and policy; role of trade barriers, exchange rates, foreign aid, energy, foreign investment.

IR 327 International Negotiation (4)

A practical course designed to improve your negotiation skills. Ideas for diagnosing situations and identifying strategies, which you apply in case studies and personal exercises. *Recommended preparation:* two IR courses.

IR 329 The Global Finance and Monetary Regime (4)

The international financial and monetary regime, its evolution and the problems facing it today.

IR 330 Politics of the World Economy (4)

Introduction to the relationship between political and economic development and ideas concerning the origins and behavior of capitalism and its impact on international relations.

IR 331 The Global Economy 2030 (4, Fa)

Examination of key ideas from economics, demography and technology. Guest lecturers illuminate possible conditions of the global economy in 2030.

IR 333 China in International Affairs (4)

Economic reform, the open door, and China's changing role in the international system. Relations with the United States, Japan, and other key powers in Asia. Tensions between the interests of American business and the human rights community over China policy.

IR 337 The Impact of Remittances on Development in Mexico (4)

Examines the nature of remittances and their effects. Can remittances promote development? Explores policy making focused on improving the quality of remittance expenditures in Mexico. *Recommended preparation:* working ability with Spanish.

IR 339 Public Health and International Relations (4, Sp)

Examination of threats to global security, state sovereignty, and population health posed by infectious diseases, natural disasters, war and civil conflict.

IR 341 Foreign Policy Analysis (4)

Basic concepts and analytical approaches in the study of decision-making at the international level. This is a case-based class, requiring participation of students in interactive discussions of decision forcing and retrospective foreign policy cases.

IR 343 U.S. Foreign Policy since World War II (4)

Analysis of U.S. foreign policy since 1945 as a basis for understanding significant new trends. Explanation of contemporary issues in U.S. relations with other nations.

IR 344 Developing Countries in World Politics (4)

Origin, concepts, realities, and ideals of the non-aligned movement, focusing on the United States' role in the developing world.

IR 345 Russian and Soviet Foreign Policy (4)

Overview of Soviet and Russian foreign policy in the 20th century. Review of the diplomatic history of the period and introduction to models of foreign policy used to analyze Soviet and Russian behavior.

IR 346 Foreign Policy of Eastern Europe and the Balkans (4)

Analysis of contemporary foreign policy issues in East-Central Europe, including inter- and intra-state conflict, peacekeeping, NATO and EU enlargement, cross-border minorities and refugees.

IR 349 International Law and Politics (4)

Exploration of international law and international politics, including sovereignty, war, international tribunals, the environment, and human rights.

IR 358 The Asia Pacific in World Affairs (4)

The cultural, political, economic, and social aspects of the Asia Pacific's rise to prominence in world affairs. Reasons for the "successes" of many Asian economies and the environmental and social problems accompanying their rapid transformation. The difficulties of interaction in complex cultural situations illustrated by participation in a computer-assisted simulation.

IR 360 International Relations of the Pacific Rim (4)

Political, economic, military, and territorial issues in East Asia and the Pacific and the role of the United States, Russia, China and Japan.

IR 361 South and Southeast Asia in International Affairs (4)

The historical, cultural, and political reasons for Asia's dramatic transformation into a powerful engine of world economic growth. The secondary consequences of economic growth for environmental protection, gender relations, ethnicity, and military tension.

IR 362 The International Relations of the Contemporary Middle East (4)

Introduction to problems and issues in the Middle East today: religio-ethnic rivalries, conflicting nationalisms and ideologies, the Arab-Israeli conflict, Middle East oil.

IR 363 Middle East Political Economy (4)

Examination of general economic development issues: population, agriculture, industrialization, trade, oil, etc. Several Mideast case study countries are then explored in depth.

IR 364 The Political Economy of Latin American Development (4)

The main economic development themes and strategies in Latin America over the past century. The interplay between domestic and international variables, and the resulting dynamic changes.

IR 365 Politics and Democracy in Latin America (4)

Examines Latin America's experience with democracy emphasizing events since the 1980s. Analyzes the roles of interest groups, ideology, domestic politics, bureaucratic processes, perceptions and analogical reasoning.

IR 366 Mexico and its Relations with the United States (4)

Analysis of Mexico and U.S.-Mexico relations, both historically and in the present day, to understand better the challenges in this key bilateral relationship.

IR 367 Africa in International Affairs (4)

General overview of main historical, political, and economic issues as they affect Africa, focusing on nationalism, development, and superpower competition in Africa.

IR 368 French Foreign Policy: 1945 to the Present (4)

Introduction to historical, thematic perspectives of French foreign policy since 1945 including review of external and internal constraints influencing foreign policy.

IR 369 Contemporary European International Relations (4)

European interstate conflict and cooperation since 1945; history of Western European integration during the Cold War; the European Union in post-Cold War Europe.

IR 371 Global Civil Society: Non-State Actors in World Politics (4)

Examination of diplomatic and moral relationships between sovereign states and transnational non-state actors, both benevolent (humanitarian groups and philanthropies) and malevolent (mercenary, pirates and terrorists).

IR 376 U.S.-Japan Encounters: War, Trade, and Culture (4)

The significance of U.S.-Japan relations is addressed through historical and policy analysis of America, Japan, and the Asia-Pacific region.

IR 381 Introduction to International Security (4)

Alternative conceptions of security; evolution of nuclear strategy; efforts to control the development and spread of nuclear and conventional weapons; current security issues.

IR 382 Order and Disorder in Global Affairs (4)

Modern and post-modern perspectives on changes in the inter-state system, relations among cultures and civilizations, the conditions of ecologically sustainable human development.

IR 383 Third World Negotiations (4) Origins, intensity, management and/or resolution of regional conflicts in developing countries and the role and intervention of great powers.

IR 384 Introduction to Asian Security (4) Introduction to key security trends in Asia-Pacific, emphasizing strategic competition between U.S., Russia, and China; regional military capabilities; rise of neutrality politics.

IR 385 European Foreign Policy and Security Issues (4) Western European foreign policy and defense issues; consensus and trends underscoring political and strategic change and policy alternatives in postwar European alliances. Course will rely heavily on case teaching approach.

IR 386 International Terrorism and Liberal Democracy (4) Examination of the nexus of terrorist threat and governmental response. Specifically, the class analyzes both terrorism's effectiveness as a means to achieve political change and the challenges faced by the liberal democratic state in responding to international terrorist campaigns.

IR 389 Islam in France (4) (Paris Semester only) Historical overview of interactions between Muslims and Europeans. Islam: origins, history and circumstances that led to its revival. France's immigration policy.

IR 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

IR 401 The United Nations and World Order (4)

The contribution of the United Nations to world order, focusing on its history, principal organs, relationships with global actors, and prospects for reform.

IR 402 Theories of War (4) Theories of war tested in historical cases; the obsolescence of war as a rational choice, and problems that still result in war. *Prerequisite:* IR 210.

IR 403 Transnational Diplomacy and Global Security (4)

Explores emerging "diplomatic" relations between nation-states and transnational (non-state) entities, such as non-governmental organizations (NGOs), in the development of global peace and security policies. *Recommended preparation:* IR 303.

IR 404 International Relations Policy Task Force (4)

Addresses unfinished question of public policy. Provides experience in interviewing and field research, oral presentation and collective discussion and deliberation. Open to juniors and seniors only.

IR 405 Cultural Heritage, Religion, and Politics in the Middle East (4, Fa) (Enroll in REL 402)

IR 406 Ethics and World Politics (4) Exploration of the relationship between ethics and politics. Special focus on religion, violence and human rights in international relations

IR 408 Global Democratization (4) Exploration of the global experience with democracy. Meaning of the term "democracy," explanations of the rise and fall of democracy, its current trends and future challenges.

IR 422 Ecological Security and Global Politics (4)

Should environmental issues be treated as threats to security? Survey of recent literature explores global environmental politics using a security framework. *Prerequisite:* IR 210 and/or environmental studies course work.

IR 424 Citizenship and Migration in International Politics (4)

Changing notions of citizenship in the context of history, and of economic, political and sociological theories of international migration; diaspora and migration case studies.

IR 425 The New Triangle: China, the U.S. and Latin America (4)

China's rise in the international political economy raises policy research questions, including an analysis of how this trend relates to U.S and Latin American relations. *Recommended preparation:* IR 210 and a course in both micro and macroeconomics at the high school or college level.

IR 426 Trade Politics in the Western Hemisphere (4)

Focus on the dynamic process of trade integration that has occurred since the mid-1980s in the Western Hemisphere.

IR 427 Seminar on Economics and Security (4)

Introduction to important economic issue areas that are understood as security-related in the contemporary world: food, trade, debt, etc.

IR 428 China's Political Economy (4)

Critical issues surrounding China's economic rise and the implications for international relations; the unique strengths and vulnerabilities of China's political-economic model; prospects for change. *Recommended preparation:* IR 210 and a course from International Relations, Political Science, or History with a strong China component.

IR 430 The Politics of International Trade (4)

Economic approaches and political processes are used to explain observed international trade policy choices. Topics covered include globalization, regionalism, labor standards, the environment and sanctions. *Recommended preparation:* ECON 450, IR 330.

IR 438 Nationalism and Ethnic Conflict after Communism (4)

Explores origins and nature of ethnic strife among post-socialist states (ethnicity and national revival, modern histories of East-Central Europe and Russia, problems and conflict resolution).

IR 439 Political Economy of Russia and Eurasia (4)

Interaction of politics and economics in the former Soviet Union and its component republics; the historical planned economy, the politics of reform and the political economy of former Soviet foreign relations.

IR 440 America's Pacific Century: Dialogues between the U.S. and Asia (4)

A hands-on analysis of the contemporary U.S. foreign policy towards East Asia through lectures, policy paper writing, and an exchange visit to Singapore.

IR 441 Comparative Analysis of Foreign Policy (4)

Comparative analysis of foreign policy determinants and decision-making; empirical emphasis.

IR 442 Japanese Foreign Policy (4)

Economic, political, territorial, and security issues; foreign policy decision-making; relations with major powers and neighboring states.

IR 443 Formulation of U.S. Foreign Policy (4)

Critical discussion of alternative approaches explaining the formulation and implementation of U.S. foreign policy: domestic politics, organizational processes, group dynamics, individual personality and perception.

IR 444 Issues and Theories in Global Society (4)

Why the world is organized into sovereign nation-states. The challenges to nation-states in the 21st century from globalization, democratization, revolution, technology, and new forms of cultural identity.

IR 445 U.S. Defense and Foreign Policy: Nonproliferation and Weapons of Mass Destruction (4)

Policies and programs aimed at stopping the spread of weapons of mass destruction. Presentations by executive/legislative officials involved in formulation and implementation of non-proliferation. Junior or senior standing required.

IR 454 The International Political Economy of Development (4)

Provides a critical introduction to scholarship on international political economy (IPE), the interaction of states and markets in a global context.

IR 463 Islam and Arab Nationalism (4)

Historical, sociological and political processes that have shaped the emergence of and relationship between Arab nationalism and political Islam since the early 20th century.

IR 464 U.S. Policy Towards the Middle East: 1950 to the Present (4)

The role of the United States in Middle Eastern affairs after the creation of the state of Israel.

IR 465 Contemporary Issues in United States-Latin America Relations (4) Examines major issues in the relationship between the United States and the countries of Latin America and the Caribbean, including trade and financial questions, security, immigration, the environment, narcotics, etc. Major bilateral relations (especially with Mexico, Brazil, and the Caribbean Basin countries) are emphasized, as are regional and multi-lateral relationships.

IR 466 Contemporary Issues in Latin American Politics (4) Focus on current politics in Latin America. Address a range of themes: electoral democracy, citizenship, political inclusion, human rights, corruption, economic inequality.

IR 468 European Integration (4) Research on the European Union's role in European international relations; internal EU developments since 1985 as an actor in the world economy.

IR 470 Comparative Regionalism (4) Analysis of the factors that provide different forms of regional arrangements in different parts of the world. *Prerequisite:* IR 210.

IR 483 War and Diplomacy: The U.S. in World Affairs (4) Perspective on recent American foreign policy; a case study of conflicting literature on the origins, development and legacy of the Cold War.

IR 484 American Religion, Foreign Policy and the News Media (4) (Enroll in JOUR 484)

IR 490x Directed Research (1-8, max 12) Individual research and readings. Not available for graduate credit.

IR 491x Field Study (1-8, max 8) Local, national, and international internships. Not available for graduate credit.

IR 494 Honors Thesis Seminar (4) Preparation and oral defense of senior honors thesis before supervising faculty and fellow honors students. (Duplicates credit in former IR 493b.) Senior status and acceptance to program required. *Prerequisite:* IR 210, IR 211.

IR 499 Special Topics (2-4, max 8) Selected topics in various special areas within international relations, which may vary from semester to semester or within semesters.

IR 500 International Relations Theory (4) Development of organized knowledge of international relations. Main currents of thought and varieties of current literature.

IR 502 Conflict and Cooperation (4, Fa) Against the background of 20th century history this course introduces the major literatures on the causes, strategy, practice, and future possibilities of war and peace.

IR 503 Theories of Diplomacy (4) Investigation of international relations through the lens of diplomatic theories, considering the limits and potential of diplomacy and how thinking about diplomacy has evolved.

IR 507 Gender and International Relations (4) An examination of gender and culture in world society. Feminist perspectives on and critiques of various approaches to international relations theories.

IR 509 Culture, Gender, and Global Society (4) Cultural and gendered responses to economic globalization; topics include culture and security, identity politics, clashes of and accommodations among civilizations, modernity, post-modernity and world society.

IR 510 Gender, War and Peace (2, Sp) Examination of the extent to which conflict and its resolution have depended on stereotypically gendered associations of men with war and women with peace.

IR 512 Linkage Politics (4) (Enroll in POSC 512)

IR 513 Social Science and Historical Research Methods: Introduction to Research Design (2 or 4) Introduction to problems in philosophy of science, epistemology, historical and historiographical inquiry, leading to development of elementary research design capabilities.

IR 514 Multivariate Analysis (4) Causal inference and modeling in international relations and political science; assumptions and problems of multivariate regression analysis in both cross-sectional and time series cases.

IR 515 Qualitative Research Design (4) A practical seminar in which to develop a dissertation proposal. Covers casual inference and comparative case study designs; single-case designs; selecting cases; interviewing; combining quantitative and qualitative methods. *Recommended preparation:* IR 513, one course in statistics, and enough substantive study to identify a likely dissertation topic.

IR 516 Advanced Research Methods: Text, Talk and Context (4) Text and discourse analysis methods and strategies. Themes include the roles of ideas, identities, policies and interests in various institutional contexts *Prerequisite:* COMM 550, IR 494, IR 513, POSC 500, PUBD 500 or PUBD 502.

IR 517 International Policy Analysis (4) Game theory and other methodologies applied to the study of international relations. Topics include global and regional public goods, collective action, externalities, treaty information, market failures.

IR 519 Field Research Methods in Comparative Politics and International Studies (4) Intended for graduate students planning social science research projects in a foreign country. Primary goal is to assist students to prepare the design for their dissertation research.

IR 521 Introduction to Foreign Policy Analysis (4) Survey of principal theoretical and empirical approaches to foreign policy analysis; bureaucratic politics, cybernetics, game theory and options analysis, comparison, design theory, simulation.

IR 522 United States Diplomacy since 1945: Issues and Decisions (4) An analysis of United States foreign policy with emphasis on the origins and structure of the cold war, decision-making, the role of ideology, containment and imperialism, and issues of the post-bipolar era.

IR 525 State and Society in International Relations (4) A readings seminar that assesses the challenges to nation-states and world order presented by trans-border cultural flows, new technologies, and changing patterns of political participation.

IR 526 Migration and Diaspora in International Politics (4) Examines issues of migration, the relationship between citizen and state, economic factors triggering emigration/immigration, transnationalism, and explores the phenomenon of diasporas.

IR 531 Strategy and Arms Control (4) Impact of nuclear weapons on U.S. and U.S.S.R. postwar military policies and strategies; evolution of postwar deterrence postures; development of superpower arms control since 1945.

IR 534 East Asian Security Issues (4) Security politics of China, Japan, ASEAN states, and Southwest Pacific nations; their strategic relations with the superpowers; regional security initiatives: nuclear-free zone politics, ZOPFAN, and indigenous military capacities. *Prerequisite:* IR 531.

IR 539 Seminar in International Politics — Conflict Processes (4) Advanced seminar in international conflict, crisis and war. General perspectives on factors that bring about war and promote peace, with priority given to ethnopolitics. Open only to graduate students.

IR 540 Seminar in International Politics — Religion and Conflict (4) Advanced introduction to how religion has emerged as a powerful force in politics. Conflict resolution, fundamentalism, terrorism, war, American foreign policy and global civil society. Open only to graduate students.

IR 541 Politics of the World Economy (4) Survey of approaches to international political economy. Intellectual roots; the management of collective goods; North-South relations are examined.

IR 542 Foreign Economic Policies of Industrial Capitalist States (4) Seminar comparing policies of Britain, France, Germany, Japan, and the United States; evaluation of alternative research methods and theories; design and execution of an original project.

IR 543 Politics of International Monetary and Trade Relations (4) Political analysis of international monetary and trade relations; emphasis on interactions among industrialized nations.

IR 545 The International Political Economy of Development (4) The political aspects of economic growth, efficiency and distribution are explored for underdeveloped nations in an international relations context.

IR 547 Political Economy of Global Space and Environment (4) Regimes in an anarchic world will be examined to assess ways oceans, atmosphere, outer-space, and other unowned spaces or resources are and can be used.

IR 550 Economic Bargaining Theory and Practice (4) Development of analytical skills and strategies for negotiations over economic and political problems, through study of recent cases and participation in bilateral and multilateral exercises.

IR 551 International Political Economy of the Pacific Rim (4) Introduces issues related to political economy of the Pacific Rim; trade, investment and development strategies of these countries. The role of Japan's increasing economic power and that of the changing U.S.-Japan relations and their implications to the rest of the Pacific Rim region.

IR 553 Political Economy of Global Telecommunication and Information (4) (Enroll in COMM 553)

IR 555 Democracy and Democratization in Comparative Perspective (4) Seminar generates and tests theories of democratization. Readings will focus on Europe, Latin America, Soviet Eurasia emphasizing core theoretical and methodological aspects. Open only to master's and doctoral students.

IR 556 Latin America and U.S. Foreign Policy (4) Latin American challenges to U.S. policymakers; U.S. success in achieving its goals; alternative explanations of U.S. behavior.

IR 557 Africa and U.S. Foreign Policy (4) Research problems on international issues arising from the emergence of Africa.

IR 561 Japanese Foreign Policy and International Relations of East and Southeast Asia (4) Research problems in political, economic, and security issues in East and Southeast Asia, with special emphasis on the role of Japan.

IR 563 Chinese Foreign Policy (4) Research problems in political, economic, military, and ideological issues.

IR 581 International Relations of the Middle East (4) Salient issues in regional politics such as colonialism, nationalism, identity, religion, development, and war are examined.

IR 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

IR 591 Field Study (1-12) Study of contemporary institutions in selected regions of the world. Maximum units which may be applied to the degree to be determined by the department.

IR 593 Practicum in Teaching the Liberal Arts (2, FaSp) (Enroll in MDA 593)

IR 594abz Master's Thesis (2-2-0) Credit on acceptance of thesis. Graded IP/CR/NC.

IR 599 Special Topics (2-4, max 8) Subjects specifically relevant to an international relations field, sometimes conducted as intensive short-courses.

IR 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

IR 791 Advanced Studies (2-4, max 12) Subjects specifically relevant to an international relations field; conducted for Ph.D. students, sometimes conducted as intensive short courses.

IR 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC.

Joint Educational Project

Joint Educational Project House

801 W. 34th St.

(213) 740-1834

FAX: (213) 740-1825

Email: tanderso@usc.edu

dornsife.usc.edu/jep

Executive Director: Tammara Anderson

The Joint Educational Project (JEP) places university students in field assignments in more than 40 community sites (including neighborhood schools, non-profit organizations and governmental institutions) primarily near the University Park Campus. Students participate in projects that seek to discover or implement solutions

to problems that have been identified by the community. In the process, students learn how to develop and apply knowledge, work in diverse social settings, become engaged in civic affairs, explore possible career paths and make professional contacts. "JEP" following a section number indicates that the professor will possibly offer JEP as a course option.

Based in the USC Dornsife College of Letters, Arts and Sciences, JEP places university students in supervised, service-learning positions as a part of their academic course work. Students registered in certain classes in the Departments of Biological Sciences, Earth Sciences, Geography, Sociology, Spanish and other disciplines are assigned to neighborhood schools,

social service/governmental agencies, and hospitals and health clinics, where they assist professionals, teach, translate, and make other contributions to the community. Students are required to submit weekly reflective essays to help them make connections between their academic course work and their experiences in the community. Work-study students work in conjunction with JEP through the USC Readers Plus program. Students assist K-9 children in the university's "Family of Schools" in the areas of math and reading, allowing USC students the opportunity to serve in the community while gaining experience in an urban school environment.

Judaic Studies

Hebrew Union College — Jewish Institute of Religion

3077 University Ave.

Los Angeles, CA 90007

(213) 765-2113

FAX: (213) 747-6128

Email: louchheim@huc.edu, hochman@usc.edu

huc.edu/louchheim

Chair: Leah Hochman, Ph.D.

Registrar: Carol Sofer

Faculty

Professors: Reuven Firestone, Ph.D.; Bruce Phillips, Ph.D.; Steven Windmueller, Ph.D.

Associate Professors: Sarah Benor, Ph.D.; Sharon Gillerman, Ph.D.; Joshua Holo, Ph.D.; Dvora Weisberg, Ph.D.

Assistant Professors: Joshua Garroway, Ph.D.; Leah Hochman, Ph.D.; Adam Rubin, Ph.D.

Adjunct Associate Professor: Yaffa Weisman, Ph.D.

Lecturers: Rivka Dori, M.A., M.S.; Hagit Arieli-Chai, M.A.Ed.

Judaic Studies is offered by the Hebrew Union College-Jewish Institute of Religion, an independent college adjacent to the USC campus. Students registering for

classes in the program do so through the regular USC registration process. They receive regular course credit and their degrees from USC. Hebrew courses may be used to fulfill graduation requirements in a foreign language; courses which meet humanities general education requirements may be used as electives or may be used for major credit with the approval of an adviser.

Bachelor of Arts in Religion with Emphasis in Judaic Studies

A Bachelor of Arts in Religion with an area of emphasis in Judaic Studies is offered cooperatively by the School of Religion and Hebrew Union College-Jewish Institute of Religion. Program requirements are listed in this catalogue under Religion, page 460xx.

The Ph.D. program in Religion and Social Ethics, offered at USC through the School of Religion, may be taken with a concentration in Judaic Studies. Applicants for the joint Ph.D. program in Religion and Social Ethics with Hebrew Union College should apply to USC; applications are considered jointly with Hebrew Union College. Applicants are required to demonstrate proficiency in Hebrew. See the School of Religion section in this catalogue (page 462xx) for more information.

Bachelor of Arts in Middle East Studies

See the Department of Middle East Studies, page 412xx, for a complete listing of requirements.

Minor in Judaic Studies

The minor in Judaic Studies provides the opportunity for in-depth study of Jewish thought, ethics, history, literature, tradition, spirituality and women's studies using approaches developed through the academic study of religion. It is an interdisciplinary program that challenges and stimulates students to examine and learn about Judaism as a topic of scientific interest.

For the minor, 20 units in Judaic Studies and Religion are required. The following courses are required: REL 301 and JS 180. Three additional courses may be chosen from among JS 321, JS 340, JS 361, JS 375, JS 382, JS 383, JS 415 and REL 312. Successful completion of five 4-unit courses or the equivalent in Jewish American Studies is required to qualify for the minor.

Minor in Jewish American Studies

The minor in Jewish American Studies offers the opportunity to study the experiences and cultures of the American Jewish community in relation to those of other American peoples. For the minor, 20 units of American Studies and Judaic Studies are required.

CORE REQUIREMENTS		UNITS
AMST 202	Interethnic Diversity in the West	4
JS 300	American Jewish History	4
Three courses from the following:		
AMST 301	America, the Frontier, and the New West	4
AMST 350	Junior Seminar in American Studies and Ethnicity: Theories and Methods	4
JS 330	Jewish Power, Powerlessness, and Politics in the Modern Era	4
JS 381	The Jew in American Society	4
JS 382	Judaism as an American Religion	4
JS 383	Jews in American Popular Culture	4
JS 415	The American Jewish Experience in Film	4
JS 428	Blacks and Jews: Conflicts and Alliances	4

Minor in Middle East Studies

See the Department of Middle East Studies, page 412xx.

Courses of Instruction

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

HEBREW (HEBR)

HEBR 120 Hebrew I (4, Fa) Modern spoken and written Hebrew with emphasis on the principles of grammar.

HEBR 150 Hebrew II (4, Sp) Continuation of modern Hebrew I.

HEBR 220 Hebrew III (4, Fa) Continuation of Hebrew II; stress on grammar, composition, and conversation.

HEBR 315 Modern Hebrew Language (Hebrew IV) (4, Sp) Fostering oral and written fluency in Hebrew language and literature through investigation of Hebrew poetry, short stories, novels and film. *Prerequisite:* HEBR 220.

JUDAIC STUDIES (JS)

JS 100g Jewish History (4, Fa) Major ideas, personalities, and movements in Jewish history from antiquity to the present in light of the interaction of the Jews with the general culture.

JS 180 Introduction to Judaism (4, Sp) Jewish beliefs, practices, and history from the biblical period to the present; Judaic contributions to Western civilization.

JS 211g The Holocaust (4, FaSp) Historical background and responses to the Holocaust, with special emphasis on ethical implications. *Concurrent enrollment:* WRIT 140.

JS 214 Zionism, Israel, and the Modern World (4, Fa) Ideas about nationalism, Zionism, and society-building; emphasis on self-definition in the Jewish state.

JS 258g Food, Faith and Conflict (4, Sp) Investigates how food and food traditions create and cross religious and social conflicts between Jews, Christians and Muslims by exploring faith, practice, thought and ethics.

JS 300 American Jewish History (4, Fa) Patterns of immigration, acculturation, religious forms, and ethnic expression in America from the colonial period to the present.

JS 321 Gender and Judaism (4, FaSp) An investigation into the ways in which gender has structured Jewish religious, social, political and intellectual life from the Biblical period through the present.

JS 330 Jewish Power, Powerlessness, and Politics in the Modern Era (4, FaSp) Explores the relationship between the Jewish people and political powers. Topics include politics in exile, changing relationships to power, and relations with the modern nation-state.

JS 340 Modern Jewish History (4, FaSp) A survey of the major trends and themes of modern Jewish history. Examination of Jewish culture, society and politics from the Spanish Expulsion to the Second World War. *Recommended preparation:* JS 100.

JS 360m Identity, Community, and Service: Jews and Other Americans (4) Examination of relationships between identity, community and service by investigating ethno-religious organizations' attempts to serve members of their group and confront issues of injustice in society.

JS 361 Scripture and Polemic in Judaism, Christianity and Islam (4, FaSp) Origins of Scriptures and their polemical environments in earliest Judaism, Christianity, and Islam. Scripture as polemic and legitimization, and cross-religious/cross-cultural interpretation and argument based on scriptural themes.

JS 362 Terror and Resistance in Literature and the Media (4, Sp) Investigation of the multiple ways that people experience and represent incidents of terror in literature, film, music, and social media.

JS 374 Messiah: The History of an Idea (4, Sp) Exploration of the history of the idea of a messiah in Judaism from antiquity to today.

JS 375 Issues of American Jewish Literature (4) Issues-oriented study of the human experience in America as expressed in the fiction, poetry, drama, memoirs, and literary criticism of America's Jews, using a dual approach incorporating both literary history and specific issues.

JS 378 Jewish Magic in the Ancient World (4, Sp) A cross-cultural examination of different kinds of magical literature that describe miraculous practices in Jewish mainstream and marginal life in the ancient and classical periods.

JS 379m Mixed Matches: Intermarriage and American Society in the 21st Century (4, Sp) An investigation into inter-ethnic, interracial, and inter-religious marriage in the 21st century.

JS 381 The Jew in American Society (4, FaSp) The changing sociological profile of the American Jew and changing organization of the American Jewish community as they developed over the 19th and 20th centuries.

JS 382 Judaism as an American Religion (4) The development of American expressions of Judaism as part of the American religious context, from the perspective of the social scientific study of religion.

JS 383 Jews in American Popular Culture (4, FaSp) Social and cultural history of American Jewish contributions to the arts, science, literature, economics and politics.

JS 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

JS 415 The American Jewish Experience in Film (4)

A survey of American Jewish history through the medium of film, with particular emphasis on the experience of the post-war generation.

JS 428 Blacks and Jews: Conflicts and Alliances (4, Sp)

Examination of the relationship between the American Jewish and African-American communities and what it teaches about race and coalition politics in American society.

JS 467 Modern Jewish Thought (4, Sp) Foundations of modern Jewish thought from the Western European Enlightenment to the present.

JS 490x Directed Research (1-8, max 12) Individual research and readings. Not available for graduate credit.

JS 499 Special Topics (4) Selected topics in Judaic Studies.

JS 501abc Bible Texts (4-4-4, FaSp) *a:* Advanced grammar and reading. An introduction to principles of form criticism as applied to selected narrative and legal portions of the Pentateuch. *b:* A critical evaluation of the biblical books of Amos and Hosea with a view to gaining an appreciation of the prophets' literary skill, their religious motivations, and the originality of their thought. *c:* Critical readings in each of the biblical books of Ruth, Lamentations, Ecclesiastes, Esther, and Song of Songs, with a view toward gaining an appreciation of their literary and religious values. Knowledge of Hebrew required.

JS 504 Modern Hebrew Literature (3, Fa) Reading of unvocalized texts primarily from modern Hebrew literature. A survey of the development of modern Hebrew literature, with an emphasis on short story and poetry. Knowledge of Hebrew required.

JS 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

JS 680 Boundaries of Jewish Normative Behavior (4, Sp) Institutions claiming Jewish authenticity and their treatment of Jews perceived to be deviant.

Kinesiology

Physical Education Building 107

(213) 740-2492

FAX: (213) 740-7909

Email: knsl@dornsife.usc.edu
dornsife.usc.edu/kinesiology

Faculty

See faculty listing for Biological Sciences (Human and Evolutionary Biology)

Academic Program Staff

Director of Instructional Laboratories: MaryAnn Bohland-Matveyenko, Ph.D.

Student Services Adviser: Laura Ames, M.Ed.

The Department of Kinesiology offers undergraduate and graduate degrees in the scientific study of human movement. The undergraduate curriculum is designed to provide a broad and comprehensive understanding of the human body at work. This includes studies of basic underlying parameters, as well as applications relevant to understanding human movement. The course work necessarily derives from a variety of disciplines, including physiology, anatomy, biochemistry, biomechanics, nutrition and psychology. As such, an undergraduate degree in human performance provides excellent training for students wishing to pursue further graduate or professional studies in health-related fields.

At the graduate level students are expected to specialize in one area, i.e., exercise physiology or biomechanics. These represent areas of active research by department faculty. The focus is on preparing individuals who will contribute to research and scholarship in their chosen discipline.

Undergraduate Degrees

Bachelor of Arts in Human Performance

The Department of Kinesiology offers a course of study that leads to a B.A. degree. As with any degree in the USC Dornsife College of Letters, Arts and Sciences, students are required to complete all applicable general education, writing, diversity and foreign language requirements. Specific degree requirements include

24 units of required core courses within kinesiology and 12 units of required collateral courses within the sciences. Students must also complete 8 units from a restricted list of electives. While restricted to kinesiology, the electives allow students to tailor the degree to their individual needs. In addition to specific course work, students have several options for acquiring practical experience and/or participating in ongoing research efforts of the faculty.

Human performance is an ideal course of study for students interested in establishing a strong science background and/or pursuing careers in teaching, coaching, sports management, sports law, athletic training, sports communication, sports journalism and many other sports-related professions. Along with the required core and collateral courses, the elective units allow sufficient flexibility to complete course prerequisites for any of the graduate health fields. Academic advisers can provide direction in planning course selections toward specific fields.

REQUIRED CORE COURSES		UNITS
EXSC 202L	Principles of Nutrition and Exercise	2
EXSC 203L	Individualized Exercise Prescription	2
EXSC 250	Drugs and Ergogenic Aids in Sport and Weight Control	4
EXSC 301L	Human Anatomy	4
EXSC 310	Sociopsychological Aspects of Sport and Physical Activity	4
EXSC 400L	Principles of Perceptual-Motor Learning	4
EXSC 401L	Kinesiology	4

REQUIRED COLLATERAL COURSES		UNITS
BISC 220L	General Biology: Cell Biology and Physiology	4
MATH 108	Precalculus	4
PSYC 274L	Statistics I	4

In addition, a minimum of 8 units is required from the list of kinesiology courses that follows. The choices from this list would depend upon the student's future course of study.

ELECTIVES		UNITS
EXSC 200L	Nutrition: Macronutrients and Energy Metabolism	4
EXSC 300L	Physiology of Exercise	4
EXSC 350	Nutrition: Micronutrients and Homeostasis	4
EXSC 405L	Applied Systems Physiology	4
EXSC 406L	Exercise and Energy Homeostasis	4
EXSC 408L	Biomechanics	4
EXSC 409	Metabolic Diseases	4
EXSC 439L	Human Performance and Bioenergetics	2 or 4
EXSC 441L	Prevention of Athletic Injuries	4
EXSC 442L	Advanced Prevention and Care of Athletic Injuries	4
EXSC 490x	Directed Research	1-4
EXSC 491L	Laboratory Experience in Kinesiology	2 or 4, max 4
EXSC 499	Special Topics	2-4

Grade Point Average Requirements

Students must obtain a minimum GPA of 2.0 or better (cumulative) for the required core requirements, the required collateral courses, and the 16 units of required electives. In addition, a minimum grade of C- (1.7) will be allowed for each of the courses in the required core courses. This requirement will be effective for incoming students (freshmen or transfers) as well as for graduation from USC.

Minor in Kinesiology

For students who would like to obtain basic knowledge of kinesiology but are majoring in another area, a minor in this field is offered. The minor may be ideal for someone pursuing a career in the management area of health and corporate fitness.

A minor in a health-related science may also be desirable for those in engineering or the physical sciences. Students pursuing a teaching or coaching career at the secondary school level may also benefit from knowledge in this area.

REQUIRED COURSES, LOWER-DIVISION		UNITS
EXSC 202L	Principles of Nutrition and Exercise	2
EXSC 203L	Individualized Exercise Prescription	2
MATH 108*	Precalculus (or equivalent)	4
PHYS 135aL	Physics for the Life Sciences	4

*MATH 117 *Introduction to Mathematics for Business and Economics*, MATH 118x *Fundamental Principles of the Calculus* or MATH 125 *Calculus I* are acceptable equivalent courses for MATH 108 *Precalculus*.

REQUIRED COURSES, UPPER-DIVISION		UNITS
EXSC 300L	Physiology of Exercise	4
EXSC 301L	Human Anatomy	4
EXSC 405L	Applied Systems Physiology	4
EXSC 407aL	Advanced Exercise Physiology	4
EXSC 408L	Biomechanics	4

A total of 28 units is required for the minor in kinesiology.

Graduate Degrees

The Department of Kinesiology offers graduate curricula leading to the Ph.D. degree. The program is designed to prepare students to conduct research in their chosen area of specialization. Specialization areas include exercise physiology or biomechanics.

Degree Requirements

These degrees are under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue (page 97xx) for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School.

Doctor of Philosophy in Kinesiology

Screening Examination

Examinations are administered during the spring semester by the departmental graduate degree commission, upon application to the student's major academic adviser. A screening examination may be given during the summer only at the discretion of the department chair.

Students who have completed their master's degree at USC must apply for selection procedures in the first semester following completion. Students completing a master's degree elsewhere may not apply until they have completed one semester of study at USC. Courses taken in the semester at USC can be applied toward the 24 unit minimum required after admission to the doctoral program. Students entering the doctoral program directly from a bachelor's degree must complete a minimum of 60 units for the Ph.D.

The decision to recommend or deny admission to the Ph.D. program is made by the graduate degree commission. If admission is denied, the student may, at the commission's discretion, apply again not less than six months no more than 12 months following the first examination; however, the evidence of intellectual and professional growth during the elapsed period must be presented. After formal admission to the program, the student may apply for the appointment of a qualifying exam committee via the appropriate form.

Course Requirements

In addition to approved graduate level work taken prior to admission, requirements include: groups of courses which support the student's specialization and establish two sub-specializations; a minimum of one independent research project completed while registered in EXSC 790 Research; a minimum of two graduate level courses from two different doctoral specialization areas within the department; independent reading and directed research (EXSC 590, EXSC 690); two courses in statistical method; and one course in research design.

Foreign Language Requirement

The department has no formal foreign language requirement. However, an individual qualifying exam committee may require competency in a foreign language if this is relevant to the student's area of research.

Qualifying Exam Committee

The student's entire program of studies is under the direction of the qualifying exam committee; an area of specialization will be selected, along with two areas of sub-specialization or one sub-specialization and one supplemental area. The committee chair will outline the courses and experiences to be included in the doctoral program, indicating which courses should be completed before the student applies to take the qualifying examinations.

Qualifying Examinations

Admission to candidacy depends upon the results of the qualifying examinations, which must be taken prior to completion of the fifth semester of graduate standing or prior to completion of the fifteenth graduate course. The examinations will consist of a series of written and oral examinations through which the student's comprehension of areas of specialization and sub-specialization will be assessed. The qualifying exam committee will determine the specific nature of the exercises after the evaluation of the written portion of the examination and will administer the oral portion.

Doctoral Dissertation

The qualifying exam committee will approve the dissertation proposal, after which its membership will be reduced to three members who will serve as the dissertation committee. One member must be from a department other than kinesiology. The committee has jurisdiction over the completion of the student's program.

Defense of the Dissertation

Upon completion of the dissertation, the committee conducts an oral examination, in which the candidate will be asked specifically to defend the dissertation as a scholarly research project. The examination also will include, in general, discussion of the candidate's areas of specialization and sub-specialization.

Courses of Instruction

EXERCISE SCIENCE (EXSC)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

EXSC 200L Nutrition: Macronutrients and Energy Metabolism (4, Fa) Gastrointestinal physiology and energy metabolism as it relates to macronutrient intake. Theories and principles of regulation of energy status and acute and chronic effects of exercise. Lecture, 3 hours; laboratory, 3 hours. *Prerequisite:* BISC 220L or BISC 221L.

EXSC 202L Principles of Nutrition and Exercise (2, FaSpSm) Fundamental knowledge of proper nutrition for optimal health performance. Concepts of weight loss, gain; understanding of cardiorespiratory functioning. Laboratory experiments; body composition evaluation, energy metabolism. Lecture, 2 hours; laboratory, 2 hours.

EXSC 203L Individualized Exercise Prescription (2, FaSp) Principles and theories related to exercise prescription; programs of weight-training, circuit-training, aerobics, flexibility, high and low-intensity training guidelines; safeguards and effectiveness. Lecture, 2 hours; laboratory, 2 hours.

EXSC 205Lxg The Science of Human Performance (4, FaSpSm) The physiological and nutritional basis of human performance. Factors that facilitate and limit athletic achievement. Lecture, 3 hours; laboratory, 2 hours. Not available for major credit. (Duplicates credit in EXSC 300L.)

EXSC 250 Drugs and Ergogenic Aids in Sport and Weight Control (4, Sp) Evaluation of drugs, nutritional supplements, and ergogenic aids and their effect on human athletic performance, weight and fat loss. Lecture, 3 hours; discussion, 1 hour.

EXSC 300L Physiology of Exercise (4, Sp) Analysis of the neuromuscular system (anatomy, development, biochemistry, physiology and mechanics). Theories and principles of neuromuscular adaptations associated with acute and chronic exercise. Lecture, 3 hours; laboratory, 3 hours.

EXSC 301L Human Anatomy (4, FaSp) Introduction to the fundamental concepts and interactions of the biology and mechanics of human motion with emphasis on musculo-skeletal anatomy. Analysis of tissues and cells and the nervous, cardiovascular, and respiratory systems included. Lecture, 3 hours; laboratory, 3 hours. (Duplicates credit in the former BISC 212.) *Recommended preparation:* high school biology.

EXSC 310 Sociopsychological Aspects of Sport and Physical Activity (4, FaSp) Examination of the individual in a social environment related to sport and physical activity; personality, motivation, attitude, and group behavior viewed in physical activity contexts.

EXSC 350 Nutrition: Micronutrients and Homeostasis (4, Fa) Theories and principles of regulation of vitamin/mineral metabolism as it relates to homeostasis of organ systems. Effects of acute and chronic exercise. Lecture, 3 hours; discussion, 1 hour. *Prerequisite:* EXSC 200L.

EXSC 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

EXSC 400L Principles of Perceptual-Motor Learning (4, Fa) Theories and principles of learning applied to gross motor performance; analysis and evaluation of variables affecting learning and performance in exercise, games, sports, and dance. Lecture, 3 hours; laboratory, 3 hours.

EXSC 401L Kinesiology (4, Fa) The study of human movement including (1) terminology, structure and function of muscle and bone, as well as endocrine systems and (2) effects of exercise and training on those systems. The basic laws of motion and analysis of sports locomotion, exercise movements and pathokinesiology. *Prerequisite:* MATH 108.

EXSC 405L Applied Systems Physiology (4, Fa) Cardiovascular, pulmonary, and renal systems in exercise. Lecture, 3 hours; laboratory, 3 hours. (Duplicates credit in former EXSC 407aL.) *Prerequisite:* BISC 220L.

EXSC 406L Exercise and Energy Homeostasis (4, Sp) Regulation of metabolic pathways and endocrinology in acute and chronic exercise. Lecture, 3 hours; laboratory, 3 hours. (Duplicates credit in former EXSC 407bL.) *Prerequisite:* EXSC 200L.

EXSC 408L Biomechanics (4, Fa) Kinematic and kinetic analysis of human motion; emphasis on performance enhancement and injury prevention. Lecture, 3 hours; laboratory, 3 hours. *Prerequisite:* EXSC 301L; MATH 108 or MATH 125; PHYS 135aL or PHYS 151L.

EXSC 409 Metabolic Diseases (4, Fa) Examination of the etiology, prevention and treatments of metabolic disorders such as diabetes mellitus, insulin resistance, metabolic syndrome and obesity as major threats to public health.

EXSC 439L Human Performance and Bioenergetics (2 or 4, Sp) Application of physiology, biomechanics and perceptual-motor principles to the study of skill acquisition and human performance. Four units — Lecture, 3 hours; laboratory, 3 hours. Two units (kinematic analysis only) — Lecture, 1 hour; laboratory, 3 hours.

EXSC 441L Prevention of Athletic Injuries (4, Fa) Application of scientific principles to conditioning, protecting, and rehabilitating the athlete. Laboratory, 2 hours. *Prerequisite:* EXSC 301L or BISC 312Lx.

EXSC 442L Advanced Prevention and Care of Athletic Injuries (4, Sp) Athletic injury assessment; principles, techniques and effects of therapeutic modalities and rehabilitative exercises. *Prerequisite:* EXSC 441L.

EXSC 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

EXSC 491L Laboratory Experience in Kinesiology (2 or 4, max 4, FaSpSm) Practical laboratory experience in basic and applied exercise physiology, biochemistry and/or biomechanics. Emphasizing development of laboratory techniques. *Prerequisite:* EXSC 200L, EXSC 203L, EXSC 300L, EXSC 301L.

EXSC 499 Special Topics (2-4, max 8) Selected topics in kinesiology.

EXSC 570 Scientific Integrity (2) Contemporary issues relating to ethics and responsible conduct of research including guidelines instituted by the Federal Government. Course fulfills requirements imposed by national funding agencies.

EXSC 580abcd Experimental Studies of Human Performance II (4-4-4-4, 2 years, FaSp) a: Force and kinematics; *b:* neuromuscular control of multijoint movements; *c:* kinetics; *d:* advanced kinetics.

EXSC 587L Seminar: Advanced Exercise Physiology (4) Body at work, energy liberation and transfer, muscular contraction, neuromuscular function, cardiovascular and pulmonary response, energy cost, nutrition and environmental adaptation. Primarily for master's students. Laboratory, 3 hours. *Prerequisite:* EXSC 300L.

EXSC 588L Seminar on Lipid Metabolism and Exercise (4) Metabolism and utilization of lipids and fatty acids in skeletal muscles with applications to exercise. *Prerequisite:* EXSC 405L; *recommended preparation:* EXSC 300L.

EXSC 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

EXSC 591 Research Seminar (4) Study of research design; critical analysis of specific techniques applied to student interests, including problem rationale, selection, development, organization, and data analysis.

EXSC 592ab Seminar in Exercise Science (a: 2, Fa; b: 2, Sp) Scientific presentations by graduate students and invited speakers on selected topics in the areas of biochemistry, biomechanics, physiology and psychology.

EXSC 593 Practicum in Teaching the Liberal Arts (2, FaSp) (Enroll in MDA 593)

EXSC 594abz Master's Thesis (2-2-0) Credit on acceptance of thesis. Graded IP/CR/NC.

EXSC 595 Seminar: Analysis of Human Motor Performance (4) Application of mechanical principles of motion to the study of sport, exercise, and dance, utilizing cinematographic and related techniques.

EXSC 627 Quantitative Electromyography in Physiology of Exercise (4) Electromyographic techniques for measurement of relaxation and muscle spasm; estimation of strength, fatigue, and muscular endurance from submaximal efforts.

EXSC 640L Neuromuscular System in Physiology of Exercise (4) Gross structure and ultrastructure of muscle tissue, nervous system control of muscle function as related to exercise physiology. Laboratory, 3 hours. *Prerequisite:* EXSC 300L, EXSC 301L; BISC 306Lx and BISC 312Lx.

EXSC 690 Directed Readings (1-8, max 8) Graded CR/NC.

EXSC 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

EXSC 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC.

Learner Centered Curricula

Richard Fliegel, Ph.D.
(213) 740-2961
Email: fliegel@usc.edu

Collaborative Learning Projects (CLP) and Individual Programs of Study (IPOS)

A research university provides many opportunities for undergraduates to learn in settings that suit a wide variety of learning styles, talents and professional aspirations. Beyond the classroom lie opportunities for individual and collaborative research projects, creative literary work, the plastic and performing arts, service

learning and internships, distance and distributive learning, overseas study and a range of other activities. To track an idea from its genesis in research to its application as the solution of a contemporary problem, students must be able to take advantage of all these learning modalities.

For that reason, the USC Dornsife College of Letters, Arts and Sciences offers two curricular structures that enable non-traditional learning experiences to be credited across institutions. In both of these options, students work with a faculty committee to create individual learning opportunities suited to their personal academic

interests and professional aspirations. The first allows self-motivated, independent learners to combine resources in a particularly rich learning experience, while the second promotes collaborative learning across several aligned modalities.

Collaborative Learning Projects

The USC Dornsife College of Letters, Arts and Sciences offers a curricular construct (MDA 460) designed to promote collaborative learning. Two or more students may propose a research project or other collaborative program, with specified learning objectives; a faculty

committee will review each proposal to decide if it comprises a well-conceived educational experience and determine the unit values to be awarded, either collectively or to each student who participates. Collaborative Learning Projects award only credit or no credit grades.

Individual Programs of Study

Individual Programs of Study (IPOS) allow individual students to design a "curriculum" of 2 to 18 units, including directed research, service learning and internships, creative artistic production and any other educational experiences that might be relevant to the proposed academic program.

An Individual Program of Study (MDA 450) might be created for an entire semester's work, including directed research, an internship and a distance learning course. Or, a more modest proposal might include 4 units of original artwork plus service learning.

Individual Programs of Study encourage students to design educational experiences that inspire them, prompting a profound engagement with a learning environment ideally suited to their individual talents. Individual Programs of Study may include a wider array of educational contexts, experiences and opportunities for nontraditional learning than are generally available

for credit at most institutions of higher education. Individual Programs of Study are letter graded.

Review Process

Students who are interested in proposing either an Individual Program of Study or a Collaborative Learning Project must complete an application that includes:

1. A full description of the project, including information about all courses, internships, and other academic activities that will be involved;
2. A statement explaining why these activities could not be accomplished within the context of existing course work and directed research;
3. A proposal for assessing the work that is to be completed for the project beyond that associated with graded courses;
4. The endorsement of a faculty member who will serve as sponsor for the project. This faculty member will typically lead directed research associated with the project and award the final grade for the entire project;
5. A sign-off from the student's major department is also required; and
6. The student's STARS report and transfer credit statement, if transfer courses are relevant.

These materials will be reviewed by three faculty members comprising an Independent Study Committee, which will consider the student's academic record and decide whether to allow the project, how many units to award and other relevant conditions.

Members of the Independent Study Committee are appointed by the vice dean of academic programs of the USC Dornsife College of Letters, Arts and Sciences for an academic year; they consult with a representative of the Registrar's Office on articulating credits. If a member of the committee wishes to serve as the sponsor for a project, the vice dean will appoint an alternate to serve on the committee and consider that student's proposal.

Credits count as elective units, unless individual departments choose to apply some or all of the units toward major or minor requirements. A student may count no more than 18 units toward the degree through a combination of Individual Programs of Study and Collaborative Learning Projects. Upon completion of the project, the student's transcript reads "Individual Program of Study" or "Collaborative Learning Project," with the units awarded and the titles of any courses included in the program. See Multidisciplinary Activities, page 414xx, for MDA 450 and MDA 460 course descriptions.

Liberal Studies

Office of Advanced and Professional Programs

Mark Taper Hall 355

(213) 740-1349

FAX: (213) 740-5002

Email: mls@dornsife.usc.edu
dornsife.usc.edu/mls

Director: Susan H. Kamei, J.D., Associate Dean of Advanced and Professional Programs

Affiliated Faculty

University Professor: Kevin Starr, Ph.D.* (History)

Florence R. Scott Professor of English: Tania Modleski, Ph.D. (English)

Professors: Judith Halberstam, Ph.D.* (American Studies and Ethnicity, Comparative Literature, and Gender Studies); Peter C. Mancall, Ph.D.* (History and Anthropology); Edwin McCann, Ph.D.* (Philosophy and English); Beth Meyerowitz, Ph.D., (Psychology and Preventive Medicine)*; William G. Thalmann, Ph.D.* (Classics and Comparative Literature)

Associate Professors: Emily Anderson, Ph.D. (English); Roberto Ignacio Díaz, Ph.D.* (Spanish and Portuguese and Comparative Literature); William R. Handley, Ph.D. (English); Lori Meeks, Ph.D. (Religion and East Asian Languages and Cultures)

Associate Professor (Teaching): Tok Thompson, Ph.D. (Anthropology)

Lecturer: Shilarna Stokes, MFA (Writing)

*Recipient of university-wide or college award for teaching or research.

Master of Liberal Studies

A multidisciplinary degree program, the Master of Liberal Studies (MLS) is designed for motivated, college-educated individuals who wish to further their intellectual growth and pursue graduate work part-time or full-time in the evenings.

The program centers on the major forces that are revolutionizing the way we conduct our professional lives, rather than on the individual liberal arts disciplines. In this way, subjects covered in the program's courses have immediate relevance to the problems and challenges of contemporary society. In particular, the program emphasizes some of the most fundamental dynamics shaping the contemporary world: urbanization and globalization, changing cultural landscape, and technological and environmental transformations.

The MLS is a year-round program consisting of nine 3-unit courses. The degree requires a core course and a summative project. Seven elective courses are chosen in consultation with the student's adviser and/or MLS program director.

Admission Requirements

Admission to the program is based upon possession of a baccalaureate degree from an accredited college or university, with a minimum 3.0 GPA. When possible, interviews will be conducted with applicants. Two letters of recommendation, a writing sample and a personal statement of purpose are required.

Degree Requirements

Course and Summative Project Requirements

Nine courses (27 units), including the core course, LBST 500 (3 units), and the summative project, LBST 585 (3 units), are required.

Courses of Instruction

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

LIBERAL STUDIES (LBST)

LBST 500 Introduction to Liberal Studies: Methods of Knowing (3, Sp) Introduction to research methods in the social sciences, humanities, and natural sciences; then methods for applied interdisciplinary research.

LBST 503 Self-Justifying Fictions (3) Theoretical approaches to the study of literature, including formal and cultural analysis and the ethics and social impact of the humanities.

LBST 505 East Asian Humanities: Classics of China, Korea, and Japan (3) Examination of major themes in East Asian culture through primary texts in translation.

LBST 507 Great Western Cities (3) Examination of Western civilization in the urban context, focusing on several great cities in their "golden age" of creativity, accomplishment, and influence.

LBST 510 Cities and Globalization (3) Contemporary urban theory and comparative urban analysis. Emphasis on the role of globalization in shaping urban form and problems.

LBST 512 Language in a Globalizing World (3) Examination of the relationship between language and geopolitical change, endangered and minority languages, and the public policy implications of multilingualism and multiculturalism.

LBST 514 Ideas of Nature in American Culture (3)

Examination of how Americans have used nature to think about themselves, environmentalism, American identity, gender/class relations, the American West, and the mythology of Los Angeles.

LBST 516 Urban Conservation Biology (3)

Analysis of plant and animal distribution in urban landscapes. Exploration of major threats to urban biodiversity and nature conservation controversies and successes.

LBST 520 Tradition and the Modern World (3)

Studies the continuing interplays between tradition and novelty; between locale and globalization; and between heritage and post-modernity with a focus on a specific locale.

LBST 525 The Revolution That Made America (3)

Ideas and politics of the world's first modern revolution, which transformed 13 colonies into a nation.

LBST 527 Information Systems From Libraries to the Internet (3)

History and sociology of information systems. Philosophical and literary implications of writing, archives, libraries, printing, and publishing from the ancient world to the Internet age.

LBST 530 Portraits of Leadership (3)

Analysis of different forms of cultural leadership in their historical, literary, and philosophical context.

LBST 531 The Hero/Heroine in History (3)

Analysis of human agency in history and whether individual men and women are capable of altering the course of history by their actions.

LBST 532 Ideas on Trial (3)

Examination of great trials in history as indicators of changing social and cultural attitudes.

LBST 535 Great Works, Great Challenges (3)

Analysis of works of literature, drama, and poetry and their relationship to their historical contexts.

LBST 537 Empire and Social Reform in America 1890-1917 (3)

Analysis through literary and historical texts of American public life, culture, and social justice during the era of U.S. ascendancy as a world power.

LBST 540 Hell, Purgatory, and Paradise: Dante's Divine Comedy (3)

In-depth reading and analysis of *Divine Comedy*, in order to develop appreciation for changing values from medieval, to Renaissance and contemporary culture.

LBST 541 Opera, Culture, History, and Thought (3)

Analysis of cultural, historic, philosophical, political, and literary movements and themes through the medium of opera.

LBST 542 The Culture of Comedy (3)

Historical and synchronic ideas of comedy. Ways in which philosophers, artists, and everyday individuals adapt in our ever-changing world.

LBST 544 Representations of Los Angeles (3)

Study of literary, artistic and/or dramatic expressions of Los Angeles and its inhabitants in modern and historical literature, art, photography, film, television, and architecture.

LBST 545 Imagining the American West (3)

Explores Western myths and realities through literature, history, film, and painting. Examines why American culture places questions about national pasts and futures in the West.

LBST 547 Acts of Interpretation: Literature, Film, and Methodology (3)

Analysis of literature, film, and methodologies for approaching issues of interpretation, readership, and spectatorship. Examination of how interpretation varies across gender, race, class, and sexuality.

LBST 550 Theories and Methods of Analysis in Cultural Studies (3)

Development of cultural studies as a fast-growing area of intellectual inquiry. Case study analysis of race/ethnicity, history and memory, space, post-modernism, globalization, censorship, and originality.

LBST 551 Narrative Forms (3, max 6)

Study of narrative in literature, film, sociology, psychology and history; how narrative conventions shape humans' experience and understanding of society, past and present.

LBST 555 Constructions of Childhood (3)

Analysis of the concept of childhood from its 18th-century origins. Applications of age studies, language, and cultural construction through fiction, history, film, and other media.

LBST 560 Effects of Traumatic Life Experiences (3)

Examination of the psychological and emotional effects of extreme trauma and survivor consequences.

LBST 570 Ecology of Night (3)

Explore the world of night. Human perception of the stars and the role of night in history. Impact of artificial lighting on non-human species and habitat.

LBST 571 Food, Fashion and Furniture: Commodities in the Global Economy (3)

Analysis of commodities from origin to consumption illustrates the global impact of everyday choices.

LBST 572 Controversies in Science, Medicine and Ethics (3)

Focus on how scientific developments drive ethical issues in medicine. Exploration of ethical dimensions of issues such as stem cells, genetic engineering and reproductive technology.

LBST 574 Advances in Genetics and Evolutionary Biology (3)

How DNA directs an organism's development and how our DNA can be "read" to understand human diversity, diseases, defects, and evolution.

LBST 585abz Master's Project (3-3-0, FaSp)

A summative research project completed in consultation with the student's committee. Departmental approval. Graded IP/CR/NC.

LBST 590 Directed Research (1-12, max 18)

Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department.

LBST 599 Special Topics (2-4, max 8)

Current issues, trends, and developments in liberal studies.

Linguistics

Grace Ford Salvatori 301

(213) 740-2986

FAX: (213) 740-9306

Email: lingdept@dornsife.usc.edu

dornsife.usc.edu/ling

Chair: Andrew Simpson, Ph.D.

Faculty

Distinguished Professor and Linda MacDonald Hilf

Chair in Philosophy: James T. Higginbotham, Ph.D.

(Philosophy)

Professors: Dani Byrd, Ph.D.; Louis Goldstein,

Ph.D.; Audrey Li, Ph.D. (*East Asian Languages and*

Cultures); Shrikanth (Shri) Narayanan, Ph.D. (*Electrical*

Engineering and Industrial and Systems Engineering);

Andrew Simpson, Ph.D.; Rachel Walker, Ph.D.; Maria

Luisa Zubizarreta, Ph.D.; Bruce Zuckerman, Ph.D.

(Religion)

Associate Professors: Elena Guerzoni, Ph.D.; Hajime

Hoji, Ph.D.; Elsi Kaiser, Ph.D.; Toben Mintz, Ph.D.

(Psychology); Roumyana Pancheva, Ph.D.; Barry

Schein, Ph.D.

Assistant Professors: Khalil Isakrous, Ph.D.; Karen

Jesney, Ph.D.

Assistant Professor (Teaching): Sandra Disner, Ph.D.

Emeritus Professor: Edward Finegan, Ph.D.*

*Recipient of university-wide or college teaching award.

Degree Programs

The Linguistics Department offers undergraduate (B.A.) and graduate (M.A. and Ph.D.) programs. A wide range of courses allows students to study formal grammar (syntax, morphology, phonology, semantics); phonetics; psycholinguistics (natural language processing, first and second language acquisition, language disorders); sociolinguistics (discourse, quantitative approaches to style, linguistics and law); universals and typology; historical linguistics and Indo-European; East Asian linguistics (Chinese, Japanese, Korean); Germanic linguistics;

Hispanic linguistics; Romance linguistics; Semitic linguistics; and Slavic linguistics.

Undergraduate Degrees

The Linguistics Department emphasizes the study of language both as an abstract system and in its psychological and social contexts. In addition to introductory linguistics and courses in linguistic analysis, students take courses in psycholinguistics (language acquisition, processing, and language disorders) and/or sociolinguistics (language and society). The undergraduate major in linguistics focuses on how the human mind structures, processes and acquires language as well as how similar communication goals are met by diverse means in the languages of the world. Students are encouraged to pursue combined majors in Linguistics/Philosophy, Linguistics/Psychology and Linguistics/East Asian Languages and Cultures, as well as double majors with computer science or a language department. Please contact the department adviser for more information.

Major Requirements for the Bachelor of Arts in Linguistics

For the lower division, LING 210 is required. For the upper division, the following courses are required: LING 301 and LING 302; four upper-division courses from the following: LING 380, LING 401, LING 402, LING 403, LING 405, LING 406, LING 407, LING 410, LING 415, LING 422, LING 450, LING 466 and LING 485; an additional upper-division course in linguistics or a related field to be chosen in consultation with the department adviser.

Linguistics Major with Honors

The linguistics major with honors requires the student to complete the requirements for the major with a GPA of 3.5 or above and to complete in addition LING 497 Honors Thesis with a grade of B or better. Intent to complete the linguistics major with honors should be registered with the undergraduate adviser no later than the second semester of the junior year.

Requirements for the Bachelor of Arts with a Combined Major in Linguistics and Philosophy

For the lower division, LING 210 is required. For the upper division the following courses are required: LING 301 and LING 302; PHIL 350 and PHIL 465; two courses selected from LING 380, LING 401, LING 402, LING 403, LING 405, LING 406, LING 407, LING 410, LING 415, LING 422, LING 466 and LING 485; and three courses selected from PHIL 450, PHIL 460, PHIL 462 and PHIL 470.

Combined Major in Linguistics and Philosophy with Honors

The combined major in linguistics and philosophy with honors requires the student to complete the requirements for the major with a GPA of 3.5 or above and to complete in addition LING 497 Honors Thesis or PHIL 494 Senior Thesis with a grade of B or better. Intent to complete the major with honors should be registered with the undergraduate adviser no later than the second semester of the junior year.

Requirements for the Bachelor of Arts with a Combined Major in Linguistics and Psychology

For the lower division: LING 210, PSYC 100 and PSYC 274L are required. For the upper division the following courses are required: LING 301 and LING 302; PSYC 314L; two courses selected from LING 380, LING 401, LING 402, LING 403, LING 405, LING 406, LING 407, LING 410, LING 415, LING 422, LING 466 and LING 485; three additional courses selected from LING 406, PSYC 301L, PSYC 326, PSYC 336L, PSYC 337L, PSYC 424 and PSYC 433.

Combined Major in Linguistics and Psychology with Honors

The combined major in linguistics and psychology with honors requires the student to complete the requirements for the major with a GPA of 3.5 or above and to complete in addition either LING 497 Honors Thesis or PSYC 380 Junior Honors Seminar and PSYC 480 Senior Honors Seminar, with a grade of B or better. Intent to complete the major with honors should be registered with the undergraduate adviser no later than the second semester of the junior year.

Requirements for the Bachelor of Arts with a Combined Major in Linguistics and East Asian Languages and Cultures

For the lower division, LING 210 is required. For the upper division, the following courses are required: LING 301 and LING 302; EALC 470; two courses from LING 380, LING 401, LING 402, LING 403, LING 405, LING 406, LING 407, LING 410, LING 415, LING 422, LING 466 and LING 485; two courses selected from EALC 304, EALC 306, EALC 315, EALC 317, EALC 320, EALC 322, EALC 400, EALC 402, EALC 406, EALC 407, EALC 412ab, EALC 413, EALC 415, EALC 417, EALC 422, EALC 424 and EALC 426; one EALC literature, civilization or thought course from EALC 332, EALC 335, EALC 340, EALC 342, EALC 345, EALC 350, EALC 352, EALC 354, EALC 355, EALC 365, EALC 380, EALC 386, EALC 452, EALC 455 and EALC 460; two additional EALC courses from category IV or V. (After consultation with a department adviser, students may petition to use EALC courses not listed toward this requirement.)

Bachelor of Arts in Interdisciplinary Archaeology

See Religion, page 460xx, for a complete listing of requirements.

Bachelor of Arts in Middle East Studies

See the Department of Middle East Studies, page 412xx, for a complete listing of requirements.

Linguistics Minor Requirements

Lower division: LING 210. Upper division: LING 301 and LING 302, one course in psycholinguistics (LING 405, LING 406 or LING 410) or in sociolinguistics (LING 375), and one additional upper-division course from LING 380, LING 401, LING 402, LING 403, LING 405, LING 406, LING 407, LING 410, LING 415, LING 422, LING 466 and LING 485.

Arabic and Middle East Studies Minor

The undergraduate minor program gives students the opportunity of supplementing their major with an emphasis in Arabic and Middle East Studies. The 20-unit

interdisciplinary minor is designed for students who want to explore and develop a critical understanding of Middle East history, culture, religion and global issues as well as acquire excellent knowledge of the Arabic language.

REQUIRED COURSES, LOWER-DIVISION		UNITS
MDES 252	Arabic IV	4

REQUIRED COURSES, UPPER-DIVISION		UNITS
ANTH 327	Anthropology of the Middle East and Islam	4
POSC 351	Middle East Politics, or	
IR 363	Middle East Political Economy	4
REL 315	Thought and Life of Islam	4

One course from the following:*

IR 362	The International Relations of the Contemporary Middle East	4
IR 363	Middle East Political Economy	4
POSC 351	Middle East Politics	4

*Cannot replicate IR 363 or POSC 351

Middle East Studies Minor

See the Department of Middle East Studies, page 412xx.

Graduate Degrees

The graduate program in linguistics trains individuals to engage in the scientific study of human language. Course work emphasizes the structural aspects of language and the mechanisms of language change. Students work closely with faculty members on problems in linguistic theory, the description of particular languages, and variation across different users and contexts, focusing on their implications for understanding social and cognitive structures.

Admission Requirements

Applicants for admission to the graduate program are expected to have a bachelor's degree in linguistics or other appropriate field and knowledge of at least one foreign language. At the least, applicants are expected to have completed an introductory course in general linguistics. Other requirements for admission include: a detailed statement of purpose with specific information about interests and goals, scores from the General Test of the Graduate Record Examinations (GRE), and at least three letters of recommendation from academic sources.

Degree Requirements

These degrees are under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue (page 97xx) for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School.

Master of Arts in Linguistics (32 units)

The department does not accept applicants for a Master of Arts degree. All graduate work in Linguistics at USC is taken as part of the Ph.D. program, and the M.A. in Linguistics is intended only as a transitional degree in the process of completing requirements for the Ph.D.

A student admitted to the graduate program may choose later to earn a terminal M.A. degree, or may be invited by the department to attempt a terminal degree.

Students pursuing the Ph.D. program in linguistics are required to complete 32 units of course work toward the M.A. degree. The choice of courses is subject to approval by the Graduate Studies Committee. In addition, students must satisfy one foreign language or research tool requirement. (See Foreign Language/Research Tool Requirement.)

M.A. Research Paper

In addition to course work and the foreign language/research tool requirement, students are also required to write one research paper the contents of which represent a distinct area. The completed paper must be submitted to the Graduate Studies Committee no later than the student's fourth semester of graduate study by the deadline established for that academic year. Following submission of the research paper, each student will conduct an oral defense of his or her work.

Doctor of Philosophy in Linguistics

Application deadline: December 1

Students pursuing the Ph.D. in Linguistics are required to complete a minimum of 60 units of course work beyond the baccalaureate. In addition to the 32 units completed toward the M.A., students are required to take three 600-level seminars in linguistics and a minimum of four units of 794ab Doctoral Dissertation. No more than eight units of 794 may be applied toward the Ph.D. degree. A maximum of 30 transfer units, approved by the university and the department may be applied to the Ph.D. degree.

After successfully completing the screening procedure, students will establish a qualifying exam committee to determine a Ph.D. course program in preparation for the dissertation. This course program must be approved by the Graduate Studies Committee.

Students seeking the Ph.D. in linguistics must demonstrate knowledge of two foreign language/research tools with at least one of them falling under Option A. One of these two foreign language/research tools is satisfied as an M.A. requirement. See Foreign Language/Research Tool Requirement.

Advisement

The student in his or her first semester will have the option of either selecting a faculty adviser or postponing such a selection until, but no later than, the last day of classes of the first year in the program. The Graduate Studies Committee (GSC) will serve as a provisional adviser until the student makes a selection.

The student has the option of changing advisers at any time without the need to seek the original adviser's approval. The student should inform the GSC and the previous adviser of the change.

At the beginning of the second year of graduate study, the faculty adviser will assist the student in planning a program of study appropriate to the student's interests leading to the screening procedure.

Required Core Courses in Linguistics

Students pursuing the Ph.D. program in linguistics are required to complete 32 units of course work toward

the M.A. degree. See Waiver and Substitution of Course Requirements (page 88xx) for possible exceptions.

REQUIRED COURSES		UNITS
LING 530	Generative Syntax	3
LING 531a	Phonology	3
THREE COURSES FROM THE FOLLOWING (TO BE COMPLETED BY THE END OF THE THIRD YEAR)		UNITS
LING 512	Linguistics Variation and Language Changes	3
LING 534	Logic and the Theory of Meaning	3
LING 576	Psycholinguistics	3
LING 580	General Phonetics	3

Screening Procedure

Before a doctoral qualifying exam committee can be established for applicants to the Ph.D. program, a student must pass a screening procedure. This procedure consists of a review of the student's graduate work at USC by Linguistics Department faculty. The review will be based on the following criteria: course work completed, including grades and papers; faculty recommendations; and evaluation of both the student's M.A. research paper and a Ph.D. screening paper. The M.A. research and Ph.D. screening papers must be in two different sub areas of linguistics, for example: syntax and psycholinguistics, or phonology and semantics, or sociolinguistics and typology.

The M.A. research paper must be completed and defended prior to the end of the fourth semester of graduate study, and the Ph.D. screening paper must be completed and defended prior to the end of the fifth semester. The set of courses leading to the M.A. research paper and the Ph.D. screening paper are determined through recommendation of the screening committee and approval of the Graduate Studies Committee.

Qualifying Exam Committee

Following the successful completion of the screening procedure, the student will establish a five-member qualifying exam committee. The qualifying exam committee is composed of at least five members; a minimum of three, including at least one tenured member, must be from the Linguistics Department and one must be a faculty member from outside the Linguistics Department. The Associate Vice Provost for Graduate Programs is *ex officio* a member of all qualifying exam committees. (Refer to the Graduate School Policies and Requirements for instructions on forming a qualifying exam committee, page 102xx.)

The Request to Take the Qualifying Examination Form is the means by which the qualifying exam committee is formally established. This form should be filed with the qualifying exam committee and the Graduate School the semester prior to taking the qualifying examination but no later than 30 days before the date of the student's written examination. In order to take the written examination, the student must submit a dissertation prospectus and an original research paper to each member of the qualifying exam committee.

Qualifying Examination

The examination qualifying a student for candidacy for the Ph.D. degree is comprehensive in nature, partly

written and partly oral. Prior to taking the qualifying examination, the student must have met all of the departmental requirements for doing so and have the recommendation of the qualifying exam committee. The committee will determine and administer the written examination.

The written examination consists of a limited number of questions in the fields related to the student's research. Students will receive the written examination two weeks after submitting the qualifying paper and will have 30 days to complete the questions. An oral examination will be scheduled by the qualifying exam committee two weeks after the written examination has been submitted.

The successful completion of the qualifying procedure is represented by the approval by the qualifying exam committee of (1) the prospectus, (2) the original research paper, (3) the written examination, and (4) oral defense.

Dissertation

The final stage of the program is the submission and defense of a dissertation that makes an original and substantial contribution to its field of study. Refer to the Graduate School section of the catalogue for the policies and procedures governing the submission of a dissertation, page 104xx.

Doctor of Philosophy in Linguistics (Hispanic Linguistics)

Application deadline: December 1

For M.A. students pursuing an area of emphasis in Hispanic linguistics 12 of the 32 required units should be in Hispanic linguistics. Students should complete these 12 units by the end of their sixth semester of graduate study. Choose four courses from the following courses (12 units): LING 538, SPAN 513, SPAN 514, SPAN 515, SPAN 516, SPAN 517, SPAN 518, SPAN 590, SPAN 652, SPAN 672, SPAN 674, SPAN 676, SPAN 677, SPAN 678.

In addition to the 32 units of course work toward the M.A. degree and the M.A. research paper, students must also satisfy one foreign language or research tool requirement, which is the same as in the general program.

For Ph.D. students, at least two 600-level Spanish seminars are required, one of which can overlap with the student's M.A. course requirement. (Choose from the 600-level courses listed above.) In addition, Ph.D. students are required to complete four units of LING 794ab Doctoral Dissertation.

Doctor of Philosophy in Linguistics (Specialization in East Asian Linguistics)

Application deadline: December 1

Students interested in East Asian linguistics take the Doctor of Philosophy in Linguistics with a specialization in East Asian linguistics. In addition to all requirements for the Ph.D. in linguistics, the following courses are required: four courses or 15 units related to East Asian linguistics that are approved by the Graduate Studies Committee (GSC), which may be chosen from the following list: EALC 537, EALC 547, EALC 557, EALC 558, EALC 560, EALC 561, EALC 580, EALC 620 and LING 539. Upon approval by the GSC, other courses may be

substituted. In addition, one of the two screening papers, the research paper associated with the qualifying examination and the doctoral dissertation must deal with at least one East Asian language. Students must also take LING 794ab Doctoral Dissertation. Students must pass the reading examination in one East Asian language.

Doctor of Philosophy in Linguistics (Specialization in Slavic Linguistics)

Application deadline: January 1

Students interested in Slavic linguistics take the Doctor of Philosophy in Linguistics with a specialization in Slavic linguistics. In addition to all requirements for the M.A. in Linguistics, the following courses are required: LING 542; SLL 510, SLL 512, SLL 514 and SLL 516; three LING 600-level seminars; and 794ab Doctoral Dissertation. Students must pass reading examinations in one Slavic language and either French or German.

Foreign Language/Research Tool Requirement

The Foreign Language/Research Tool requirement may be satisfied by choosing from the following options:

(A) Demonstrate a working knowledge of a second language by:

1. Passing a department internal written translation examination administered by a qualified faculty member, or

2. Demonstrating native speaker competence in a language other than English.

(B) Demonstrate a working knowledge of statistics and experimental design by passing, with a grade of B or higher, LING 501a (or its equivalent) and a second course, such as LING 501b or its equivalent, where this knowledge is applied to a linguistic research problem.

The prior approval of the Graduate Studies Committee will be required to complete courses other than those listed above.

(C) Demonstrate the ability to use the computer as a research tool by passing, with a grade of B or higher, LING 585 (or its equivalent) or by completing a programming project related to linguistics; this should be equivalent in scope to a term project for a semester course.

The prior approval of the Graduate Studies Committee will be required to complete a course other than the one listed above.

Courses of Instruction

LINGUISTICS (LING)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

LING 110Lg In a Word (4, FaSp) Words as a gateway to the human mind. How words are stored, comprehended and retrieved. How words are constructed. Words and concepts. Words and social constructs. The processing and the acquisition of words in normal and atypical children and adults.

LING 115g Language, Society, and Culture (4, FaSp)

Discourse patterns among diverse social groups in institutional and interpersonal settings; interrelationships among language practices and gender, socioeconomic status, ethnicity; social structures and cultural values as reflected in language policies and practices. *Concurrent enrollment:* WRIT 140.

LING 125 Hindi I (4, Fa)

Introduction to current Hindi. Oral practice, listening and reading comprehension; grammar necessary for simple spoken and written expression. Lecture, classroom drill, laboratory practice.

LING 155 Hindi II (4, Sp)

Continuation of LING 125. Reading of simple Hindi prose, practice in pronunciation, the grammar essential for reading comprehension and writing. Lecture, classroom drill and laboratory practice. *Prerequisite:* LING 125.

LING 210 Introduction to Linguistics (4)

Empirical study of the sounds and structures of human language; syntax and semantics; language change; linguistic universals.

LING 255 Hindi III (4, Fa)

Continuation of LING 155; intensive work in listening comprehension, oral communication, reading and writing short essays; introduction of readings and periodicals related to Hindi culture and civilization. *Prerequisite:* LING 155.

LING 265x Hindi IV (4, Sp)

Reading of modern Hindi authors, review of grammar, composition, oral conversation, and collateral reading. *Prerequisite:* LING 255.

LING 275Lg Language and Mind (4, FaSp)

Language within cognitive science: speech physiology and acoustics, language acquisition, reading, language disorders, perception and mental representation of words, linguistic diversity and computer analysis of speech.

LING 285Lg Human Language and Technology (4)

Study of human linguistic competence and technologies that simulate it. Grammar, parsing, text generation; semantics, pragmatics, sense disambiguation; phonetics, speech synthesis, speech recognition.

LING 295g The Ancient Near East: Culture, Archaeology, Texts (4)

An investigation of the peoples of the ancient Near East, focusing upon the writings which they produced, their languages and scripts, and their archaeological remains. *Concurrent enrollment:* MDA140.

LING 301 Introduction to Phonetics and Phonology (4, Fa)

A survey of topics in phonetics and phonology. (Duplicates credit in former LING 401a.) *Prerequisite:* LING 210.

LING 302 Introduction to Syntax and Semantics (4, Fa)

A survey of topics in syntax and semantics. (Duplicates credit in former LING 402a.) *Prerequisite:* LING 210.

LING 374 Language and Society in East Asia (4)

(Enroll in EALC 374)

LING 375 Sociolinguistics (4) Linguistic and cultural pluralism in the U.S.; distributional and structural characteristics of selected urban and minority dialects; the relationship between dialects and "media standard."

Prerequisite: LING 210.

LING 380 Languages of the World (4)

Introduction to the world's linguistic diversity; number of languages spoken and where; grammatical structure and social function of selected languages.

LING 390 Special Problems (1-4)

Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

LING 401 Advanced Phonology (4)

Advanced study of topics in phonology. (Duplicates credit in former LING 401b.) *Prerequisite:* LING 301.

LING 402 Advanced Syntax (4, Sp)

Advanced study of topics in syntax. (Duplicates credit in former LING 402b.) *Prerequisite:* LING 210, LING 302.

LING 403 Advanced Semantics (4)

Topics in the theory of meaning in natural language (Duplicates credit in former LING 201.) *Prerequisite:* LING 302.

LING 405 Child Language Acquisition (4)

Universal characteristics of child language; stages of acquisition of phonology, syntax, semantics; processes and dimensions of development; psychological mechanisms; communicative styles. (Duplicates credit in former LING 395.)

LING 406 Psycholinguistics (4)

Experimental and theoretical aspects of how spoken and written language is produced and understood, learned during childhood, and affected by brain damage. *Prerequisite:* LING 210 or PSYC 100.

LING 407 Atypical Language (4)

Analysis of atypical language and language pathologies throughout the lifespan and their relevance to current linguistic and cognitive science theory. *Prerequisite:* LING 210 or PSYC 100.

LING 409 Linguistic Structure of English (3)

An overview of the syntactic, semantic, pragmatic structures of English as they relate to the theoretical literature on language acquisition.

LING 410 Second Language Acquisition (4)

Theories of second language acquisition in children and adults; comparison of first and second language acquisition including psychological, social, and individual factors. (Duplicates credit in former LING 396.) *Prerequisite:* LING 210.

LING 411x Linguistics and Education (4)

Practical classroom approaches to children's language; relationships between writing, reading, and speaking; social and regional dialects; traditional, structural, and generative-transformational grammars. Not available for major or minor credit.

LING 412 Linguistic Interpretation of the Law (4)

Principles of semantics; analysis of speech acts including informing, promising, threatening, warning; linguistic analysis of consumer contracts and advertisements; readability studies.

LING 415 Phonetics (4) Familiarization with the articulation and transcription of speech sounds. Also vocal tract anatomy, acoustics, speech technology, non-English sounds, perception. Includes laboratory exercises.

LING 422 Language Contact and Language Acquisition (4, Sp) The emergence of new languages, known as Creoles, in socio-historical situations where linguistic input is degraded and insufficient to support the ordinary language acquisition process.

LING 433 Children's Learning and Cognitive Development (4) (Enroll in PSYC 433)

LING 450 New Horizons in Forensic Speaker Identification (4) Overview of methods used to identify voices on the basis of their characteristic speech patterns.

LING 465 Philosophy of Language (4) (Enroll in PHIL 465)

LING 466 Word and Phrase Origins (4) Introduction to historical-comparative word study; history of ideas concerning language relationships; types of semantic change; hidden metaphors in English word-stock.

LING 480 Linguistic Structures (4) Analysis of grammatical structures of an individual language.

LING 485 Field Methodology (4) Elicitation techniques and methodological principles; recording and analysis of phonological, syntactic, and semantic structures; practical approaches to procedures used in urban, rural, and "primitive" settings.

LING 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

LING 497 Honors Thesis (4, FaSp) Writing of the honors thesis. Registration is restricted to honors students.

LING 499 Special Topics (2-4, max 8) Investigation of selected topics in linguistics.

LING 501ab Experimental Methods in Linguistics (3-3) *a:* Univariate and bivariate statistical methods with applications to linguistic research; introduction to statistical computer packages. *b:* The application of advanced multivariate statistical methods to linguistic research. (Duplicates credit in former LING 601.) *Prerequisite:* LING 501a.

LING 505abc Seminar in Linguistics (1-1-1) *a:* Exploration of the professional world of linguistics for first semester graduate students. *b:* Preparation and presentation of M.A./Ph.D. screening papers; discussion of student research. *c:* Colloquium for presentation and discussion of student research paper. Graded CR/NC.

LING 512 Linguistic Variation and Language Changes (3, Fa)

Linguistic relationships among various correlates of variation: social, psychological, and chronological. Focus on dialectal, registral, and historical variation; the constraints of production and perception in different modes and situations.

LING 513 Spanish Morphology and Phonology (3, FaSp) (Enroll in SPAN 513)

LING 514 Spanish Syntax (3, FaSp) (Enroll in SPAN 514)

LING 515 Spanish Grammar in Discourse (3, FaSp) (Enroll in SPAN 515)

LING 527 Second Language Acquisition (3, Sp) Concepts and issues in theoretical approaches to the study of non-primary language acquisition; e.g., linguistic and processing universals, language transfer, language learnability, fossilization.

LING 530 Generative Syntax (3) Introduction to syntax; transformational-generative syntax.

LING 531ab Phonology (a: 3, Fa; b: 3, Sp) Traditional views of phonology; generative phonology; current developments in phonological research and theory.

LING 532 Current Issues in Syntactic Theory (3) Original literature, focusing whenever possible on issues in comparative syntax and their implications for universal grammar. Course complements LING 530.

LING 533 Language Universals and Typology (3) Introduction to language universals and typology.

LING 534 Logic and the Theory of Meaning (3) An introduction to logic in preparation for advanced work in semantics and linguistic theory.

LING 535 Syntax and Grammatical Theory (3, Sp) Principles and comparison of modern theories of grammar with special reference to syntax.

LING 536 Semantics (3, Sp) Current linguistic approaches to the semantics of natural language; analysis of concepts of meaning and reference.

LING 537 Advanced Syntax (3, max 9) Topics in advanced formal syntax; current literature leading to open questions in research; survey of important and controversial issues of current theoretical relevance.

LING 538 Selected Topics in Romance Syntax (3, max 9, Sp) Overview of selected topics in Romance Syntax within a comparative perspective and their contribution towards the understanding of a general theory of grammar.

LING 539 Japanese/Korean Syntax and Theoretical Implications (3, max 9) Critical discussion of selected papers and dissertations on Japanese/Korean syntax and consideration of their theoretical implications.

LING 540 Field Methods in Linguistics (3, max 6, Sp)

Recording and analysis of a living language as employed by a native speaker of that language.

LING 541 Field Methods in Second Language Acquisition (3) Research design and methodology; data collection, coding, and analysis; ethical considerations.

LING 542 Historical Linguistics (3, 2 years, Sp) Principles of language change; the comparative method; structural and social factors in language change.

LING 546 Comparative Indo-European Linguistics (3) Analysis of the phonological, morphological, and syntactic structures of Proto-Indo-European, and its development in the various branches of Indo-European.

LING 547 Morphology (3, max 12, FaSpSm) Introduction to morphology: words versus sentences, the grammar of words, the various notions of "lexicon," the architecture of the phonological component. This course is in preparation for advanced work in linguistic theory.

LING 548 Lexical Semantics (3, Sp) Languages group meaning elements together in different ways to form words. Consideration of how to identify these elements and how speakers map them into lexico-syntactic units.

LING 550 Advanced English Linguistics (3) The analysis of problems in the grammatical description and history of English.

LING 555 Comparative Germanic Linguistics (3) Nature and relationship of changes that led to the differentiation of the individual Germanic languages.

LING 557 Structure of the Chinese Language (4) (Enroll in EALC 557)

LING 561 Topics and Issues in East Asian Linguistics (4, max 12) (Enroll in EALC 561)

LING 573 Sociolinguistics (3) Theoretical approaches to language in social context; discourse analysis, ethnography of communication, variation theory.

LING 574 Advanced Sociolinguistics (3, max 9) Current issues in sociolinguistic theory.

LING 576 Psycholinguistics (3) Theories of acquisition; sentence and discourse processing; language and thought.

LING 579 Child Language Development (3, Sp) Acquisition of grammatical, discourse, and conversational competence; strategies and structures.

LING 580 General Phonetics (3, Sp) Familiarization with articulation, transcription, production, and acoustic analysis of the speech sounds found in the world's languages. Also speech technology, perception, and disorders. Includes laboratory exercises.

LING 581 Topics in Advanced Phonology (3, max 9)
Topics in advanced formal phonology; theoretical issues in the interface of phonology with other areas of linguistics; literature study on themes of current theoretical relevance. *Recommended preparation:* LING 531ab.

LING 582 Experimental Phonetics (3, FaSp) Source-filter theory, acoustic correlates of speech sounds, vocal tract and auditory physiology, coarticulation and motor coordination, speech technology including synthesis and recognition, experimental design and statistics, and speech perception. *Prerequisite:* LING 580.

LING 585 Computational Linguistics (3) Using hands-on and research techniques, study of the role of linguistic knowledge and the procedures that implement it in computational systems that process natural language.

LING 586 Advanced Psycholinguistics (3, max 9)
Current issues in psycholinguistic theory.

LING 590 Directed Research (1–12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

LING 593x Practicum in Teaching the Liberal Arts: Linguistics (2, FaSp) Practical principles for the long-term development of effective teaching within college disciplines. Graded CR/NC. Open only to doctoral students.

LING 595 Directed Readings (1–4, FaSpSm) Maximum units which may be applied to the degree to be determined by the department.

LING 599 Special Topics (2–4, max 8, FaSpSm)
Research trends as reflected primarily in the current periodical literature.

LING 602 Seminar in Experimental Methods in Linguistics (3) Topics in quantitative methods in linguistics research, e.g., covariance structure analysis, multi-dimensional scaling, log linear model, meta-analysis.

LING 610 Seminar in Linguistic Theory (3, max 12, Sp)

LING 615 Seminar in Linguistics Structures (3, max 12, 2 years, Fa) Analysis of the synchronic or diachronic phonology, morphology, and syntax of individual languages.

LING 627 Seminar in Second Language Acquisition (3, max 12, FaSp) Readings in second language acquisition as the framework for a discussion and research-oriented seminar.

LING 631 Seminar in Phonological Theory (3, max 12, Fa)

LING 632 Seminar in Phonetics (3, max 12, FaSp)
Readings in phonetic theory and current research as the framework for a discussion-oriented class. *Prerequisite:* LING 580.

LING 635 Seminar in Syntax (3, max 12, FaSp)

LING 636 Seminar in Semantics (3, max 12, Fa)

LING 645 Seminar in Language Change (3, max 12, Sp)

LING 675 Seminar in Sociolinguistics (3, max 12, Sp)

LING 676 Seminar in Psycholinguistics (3, max 12, Sp)

LING 790 Research (1–12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

LING 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC.

Mathematical Finance

Kaprielian Hall 104
(213) 740-2400
FAX: (213) 740-2424
Email: njamison@usc.edu
Director: Jin Ma, Ph.D. (Mathematics)

Codirector: Michael Magill, Ph.D. (Economics)

Staff Contact: Nicole Carr

Minor in Mathematical Finance
Kaprielian Hall 104
(213) 740-2400

This interdisciplinary minor was created for students in business, economics and mathematics, whose majors already require some of the introductory course work. Students in other programs are welcome but should expect the minor to require more units than it does for students in those programs.

As with all minors, students must include at least four upper-division courses and four courses dedicated exclusively to this minor (which may be the same four courses). Finally, students must select four courses outside their major department. Economics majors must choose four courses outside of economics; math majors must choose four courses outside of math; business majors must choose four courses outside of the Marshall School of Business. These may be the same courses used to meet the first two conditions.

REQUIREMENTS		UNITS
ECON 203	Principles of Microeconomics, and	4
ECON 205	Principles of Macroeconomics, or	4
ECON 351x	Microeconomics for Business, and	4
ECON 352	Macroeconomics for Business	4
Choose one of the following two sequences (8 units):		
ECON 303*	Intermediate Microeconomic Theory	4
ECON 305*	Intermediate Macroeconomic Theory, or	4
BUAD 350*	Macroeconomic Analysis for Business Decisions	4
BUAD 351*	Economic Analysis for Business Decisions	4
Choose two courses, one from each of the following pairs (8 units):		
MATH 118x	Fundamental Principles of the Calculus, or	4
MATH 125	Calculus I	
MATH 218*	Probability for Business, or	4
MATH 407*	Probability Theory	
Choose two courses from the following list (8 units):		
MATH 126 or MATH 127; MATH 225 or MATH 245;		
MATH 226 or MATH 227; MATH 408 or MATH 467		

Choose one course from the following list (4 units):
BUAD 306, BUAD 310, ECON 350*, ECON 357*, FBE 441*

Choose one course from the following list (4 units):
ECON 452*, ECON 457*, FBE 324*, FBE 421*, FBE 443*, FBE 445*, FBE 459*, FBE 462*, FBE 464*

Choose one course from the following:
ITP 109x, ITP 110x, CSCI 101
**Prerequisite required*

Total requirements, for students with no prior course work: 42–43 units

Students majoring in business administration, economics or mathematics can meet many of these requirements with course work that also satisfies their majors. In addition to those classes, students in those majors must complete the following requirements:

- Business majors satisfy 24 units with course work that is also required for the major and need to complete only 18 units in MATH, ECON and ITP or CSCI
- Economics majors satisfy 20–24 units with course work required for the major (including one major elective), needing only 18–22 units in BUAD, FBE, ITP or CSCI and MATH
- Mathematics majors satisfy 16 units with course work required for the major, needing only 26 units in BUAD, ECON, FBE and ITP or CSCI

Progressive Degree Programs in Mathematics

See Mathematics, page 404xx, for progressive degree requirements.

Master of Science in Mathematical Finance

The objective of this master of science program is to produce graduates with a rigorous foundation in the economic theory and mathematical modeling of financial markets. The program creates an integrated curriculum spanning four disciplines: economics, mathematics, econometrics/statistics and computational/numerical analysis. The program is designed for recent graduates in the fields of applied mathematics, physics and engineering — or for graduates in economics, business and finance with strong mathematical backgrounds — who wish to pursue high-tech finance careers in financial institutions, industry or government.

Admission Requirements

Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue for general regulations (page 97xx). All applicants must take the GRE General Test. Complete transcripts of undergraduate and any graduate level courses are required, as well as a statement of purpose and three recommendation letters. A substantial undergraduate background in mathematics is required, which should include one semester of real analysis or advanced calculus, one semester of linear algebra and one semester of advanced probability/statistics. Candidates with weaker backgrounds may be required to take mathematics classes prior to admission to the program. An undergraduate knowledge of microeconomics and of macroeconomics, and partial differential equations is helpful, although it is not required for admission. Some experience in Matlab and C/C++ programming is also useful.

Foreign Language Requirement

There is no foreign language requirement.

Course Requirements

Thirty units of course work are required, six core courses and four to five elective courses. Students are required to satisfy a summative experience for degree completion. This will be in the form of registration in 1 unit of MATH 590 Directed Research with a summative report at the end of the term. Topics of research will be determined by the program director. The program consists of:

REQUIRED CORE COURSES (6 COURSES, 18 UNITS) UNITS

Mathematics and Mathematical Finance:		
MATH 530ab	Stochastic Calculus and Mathematical Finance	3-3
MATH 512	Financial Informatics and Simulation (Computer Labs and Practitioner Seminar)	3
MATH 590	Directed Research	1

Financial Economics and Econometrics:

ECON 613	Economic and Financial Time Series	4
ECON 659	Economics of Financial Markets I	4

ELECTIVE COURSES (4 COURSES, 12 UNITS) UNITS

Computational and Empirical Finance (must take at least 2 courses)*:		
FBE 535	Applied Finance in Fixed Income Securities	3
FBE 554	Trading and Exchanges	3
FBE 555	Investment Analysis and Portfolio Management	3
FBE 559	Management of Financial Risk	3
FBE 589	Mortgages and Mortgage-Backed Securities and Markets	3
(FBE 555 highly recommended)		

Statistics*:

MATH 541ab	Introduction to Mathematical Statistics	3-3
MATH 543L	Nonparametric Statistics	3
MATH 547	Methods of Statistical Inference	3

Numerical/Optimization/Other Methods*:

MATH 501	Numerical Analysis and Computation	3
MATH 502ab	Numerical Analysis	3-3
MATH 504ab	Numerical Solution of Ordinary and Partial Differential Equations	3-3
MATH 505ab	Applied Probability	3-3
MATH 508	Filtering Theory	3
MATH 509	Stochastic Differential Equations	3
MATH 585	Mathematical Theory of Optimal Control	3

Computational and Financial Economics:

ECON 614	Economic and Financial Time Series II	4
ECON 652	Economics of Financial Markets II	4
PM 511ab	Data Analysis	4-4

Prerequisites for any of the above courses can be waived based on students' knowledge of the subject area. Approval from the program director is required.

**The elective courses in statistics/numerical/optimization/other methods and computational and empirical finance have to be approved for each student by the program directors. Other electives, not on this list, may sometimes be approved after consultation with program directors.*

Mathematics

Kaprielian Hall 104

(213) 740-2400

FAX: (213) 740-2424

Email: mathinfo@dornsife.usc.edu

Chair: Francis Bonahon, Ph.D.

Faculty

University Professor and USC Associates Chair in Natural Sciences: Michael S. Waterman, Ph.D. (Biological Sciences and Computer Science)

University Professor and Andrew and Erna Viterbi Chair in Communications: Solomon Golomb, Ph.D. (Electrical Engineering)

Dean's Professor of Mathematics: Eric M. Friedlander, Ph.D.

Gabilan Assistant Professor of Mathematics: Sami Assaf, Ph.D.

Professors: Kenneth Alexander, Ph.D.; Richard Arratia, Ph.D.; Peter Baxendale, Ph.D.; Francis Bonahon, Ph.D.*; Susan Friedlander, Ph.D.; Jason Fulman, Ph.D.; Larry Goldstein, Ph.D.; Robert Guralnick, Ph.D.*; Nicolai T.A. Haydn, Ph.D.; Ko Honda, Ph.D.; Edmond A. Jonckheere, Ph.D. (Electrical Engineering); Sheldon Kamienny, Ph.D.; Igor Kukavica, Ph.D.; Charles Lanski, Ph.D.; Sergey Lototsky, Ph.D.; Jin Ma, Ph.D.; Feodor Malikov, Ph.D.; Remigijus Mikulevicius, Ph.D.; M. Susan Montgomery, Ph.D.*; Paul K. Newton, Ph.D. (Aerospace and Mechanical Engineering); Wlodek Proskurowski, Ph.D.; John E. Rolph, Ph.D. (Information and Operations Management); Gary Rosen, Ph.D.; Robert J. Sacker, Ph.D.; Fengzhu Sun, Ph.D. (Biological Sciences); Simon Tavaré, Ph.D. (Biological Sciences); Nicholas P. Warner, Ph.D. (Physics); Chunming Wang, Ph.D.; Jianfeng Zhang, Ph.D.; Mohammed Ziane, Ph.D.

Associate Professor: Jay Bartroff, Ph.D.

Assistant Professors: Aravind Asok, Ph.D.; Sami Assaf, Ph.D.; Sabin Cautis, Ph.D.; Aaron Lauda, Ph.D.

Professors (Research): Leonid Piterbarg, Ph.D.; Alexander G. Tartakovsky, Ph.D.

Associate Professor (Teaching): Cymra Haskell, Ph.D.

Assistant Professors (Non-Tenure Track): Quentin Berger, Ph.D.; Weiwei Hu, Ph.D.; David Rose, Ph.D.; Joseph A. Ross, Ph.D.; Heather M. Russell, Ph.D.; Leila Setayeshgar, Ph.D.; Konstantin Zuev, Ph.D.

Professors Emeriti: Edward K. Blum, Ph.D.; Ronald E. Bruck Jr., Ph.D.

**Recipient of university-wide or college teaching award.*

Degree Programs

The Department of Mathematics has designed its major to give students an understanding of the several areas of mathematics. The program of study allows students to use electives to prepare themselves for a specific field, whether in industry, teaching or advanced graduate

research. The faculty is engaged in a wide variety of research activities and offers courses in many areas.

The department offers the B.S., B.A. and minor in mathematics; B.S. and B.A. in applied and computational mathematics; B.S. in mathematics/economics; progressive degree programs in mathematics; M.S. in applied mathematics; M.S. in mathematical finance; M.S. in statistics; M.A. in mathematics; M.A. in applied mathematics; M.S. in computational molecular biology; Ph.D. in applied mathematics; and Ph.D. in mathematics.

Undergraduate Degrees

Advanced Placement Examinations in Mathematics

The university grants four units of credit in mathematics for scores of 4 or 5.

Pre-major Requirements

MATH 125, MATH 126 or MATH 127, MATH 225, MATH 226 or MATH 227 are required.

Major Requirements for the Bachelor of Arts in Mathematics

Six math courses at the 400 level or above including MATH 410, MATH 425a and either MATH 434 or MATH 435, are required.

Major Requirements for the Bachelor of Science in Mathematics

Eight math courses at the 400 level or above, excluding MATH 434 and MATH 450, but including:

REQUIRED COURSES		UNITS
MATH 410	Fundamental Concepts of Modern Algebra	4
MATH 425ab	Fundamental Concepts of Analysis	4-4
MATH 471	Topics in Linear Algebra	4
REQUIRED PHYSICS COURSES		UNITS
PHYS 151L	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4
PHYS 153L	Fundamentals of Physics III: Optics and Modern Physics	4

Four additional courses in natural sciences or computer science, but excluding courses in mathematics, are required. At least two of these must be upper-division courses, and each of the four courses must be acceptable for the Bachelor of Science degree in the department in which it is offered.

Major Requirements for the Bachelor of Arts in Applied and Computational Mathematics

Pre-major Requirements: MATH 125, MATH 126, MATH 225 or MATH 245, MATH 226

In Mathematics: MATH 407, MATH 458

At Least Four More Courses From the Following: MATH 370, MATH 408, MATH 410, MATH 425a, MATH

430, MATH 432, MATH 435, MATH 445, MATH 466, MATH 467, MATH 471

In Computing: At least one programming course such as CSCI 101L, ITP 109x, ITP 110x, ITP 150x, ITP 165x or other programming courses approved by the program advisers.

Electives: At least three additional courses with significant quantitative content, in mathematics, natural sciences, computer science, engineering, economics or other fields approved by the department. At least two of these must be outside the mathematics department; moreover, at least two of these three must be in the same department, one of which must be an upper-division course.

Major Requirements for the Bachelor of Science in Applied and Computational Mathematics

Pre-major Requirements: MATH 125, MATH 126, MATH 225 or MATH 245, MATH 226

In Mathematics: MATH 407, MATH 408, MATH 425a, MATH 458. At least three courses from MATH 370, MATH 410, MATH 425b, MATH 430, MATH 432, MATH 435, MATH 445, MATH 466, MATH 467, MATH 471

Students contemplating a graduate degree in mathematics are advised to take MATH 410, MATH 425b and MATH 471.

In Computing: At least one programming course such as CSCI 101L, ITP 109x, ITP 110x, ITP 150x, ITP 165x or other programming course approved by the program advisers.

Electives: At least five additional courses with significant quantitative content in mathematics, natural sciences, computer science, engineering, economics or other fields approved by the department. At least three of these must be outside the mathematics department; moreover, at least three of these must be in the same department, and at least two must be upper-division courses.

Grade Point Average Requirements

For each undergraduate degree an overall GPA of 2.0 in all upper-division courses taken for the degree is required. In addition, any upper-division course specifically listed as required must be passed with a grade of C (2.0) or better (e.g., MATH 410, MATH 425ab and MATH 471 for the B.S. degree).

Minor in Mathematical Finance

This interdisciplinary minor was created for students in business, economics and mathematics, whose majors already require some of the introductory course work. Students in other programs are welcome but should expect the minor to require more units than it does for students in these programs. For more information, see Mathematical Finance, page 401xx.

Minor in Statistics
Kaprielian Hall 104
(213) 740-2400

This interdisciplinary minor should appeal to students from any discipline who are interested in acquiring a

basic understanding of the mathematics underlying modern statistical analysis and inference techniques, in learning how to handle and analyze large data sets, and in gaining insight into the applications of modern statistics. Students who complete this minor should be able to critically interpret statistically based conclusions, should be viable candidates for entry level positions requiring some knowledge of modern statistics and data analysis, and should be prepared to enter a graduate-level program in applied statistics. The only prerequisite for this minor is one semester of elementary calculus.

As with all minors, students must include at least four upper-division courses and four courses dedicated exclusively to this minor (which may be the same four courses). Finally, students must select four courses outside their major department. These may be the same four courses used to meet the first two conditions. Note that Math B.A. and B.S. economics/mathematics students may complete this minor by taking MATH 407 and MATH 408 and at least 16 additional upper-division units approved by the Department of Mathematics, which are not in their major department and not being used to satisfy a requirement for their major. Note also that if calculus must be taken to satisfy the prerequisite for MATH 307, 20 units would be required to complete the minor.

REQUIREMENTS		UNITS
MATH 307	Statistical Inference and Data Analysis I (prerequisite: MATH 118 or MATH 125), and	4
MATH 308	Statistical Inference and Data Analysis II, or	4
MATH 407	Probability Theory (prerequisite: MATH 226) and	4
MATH 408	Mathematical Statistics	4
Electives*		8
Total		16 units

*Electives may be any upper-division or graduate level classes involving the theory or application of statistics approved by the Department of Mathematics. The department maintains a list of currently pre-approved courses that students may choose from. Potential courses include: BISC 478 Computational Genome Analysis (4 units), ECON 414 Introduction to Econometrics (4 units), ECON 419 Advanced Econometrics (4 units) and PSYC 421L Applied Multivariate Statistical Methods (4 units).

Mathematics Minor Requirements

MATH 125, MATH 126 or MATH 127, MATH 225 or MATH 245, MATH 226 or MATH 227 and four math courses at the 400 level or above, one of which must be from MATH 410, MATH 425a, MATH 435, MATH 440 or MATH 471. These four courses at the 400 level or above must total at least 16 units.

Honors Program in Mathematics

Admission to the Program

The honors program is available for mathematics majors. A student must apply to the department for admission. A minimum grade point average of 3.5 is required in the first two years of university work as well as in the lower-division mathematics courses MATH 125, MATH 126 or MATH 127, MATH 225 and MATH 226 or MATH 227.

Requirements

The students must complete all requirements for the degree program in which they are enrolled. MATH 410, MATH 425ab and MATH 471 are required. The remaining courses at the 400 level or higher must be acceptable for the B.S. degree.

In addition, students in the honors program must register for at least four units of MATH 490X Directed Research. The student must have an overall GPA of at least 3.5 in all courses at the 400 level or higher.

Combined Mathematics/Economics Major Requirements for the Bachelor of Science

Students are required to take seven courses in economics, seven courses in mathematics and one course in computer programming languages.

Pre-major Requirement: MATH 125

In Economics: ECON 203, ECON 205, ECON 303, ECON 305, ECON 414 and at least two other ECON courses at the 400-level or above

In Mathematics: MATH 126 or MATH 127; MATH 225 or MATH 245; MATH 226 or MATH 227; MATH 407, MATH 408 and at least two other MATH courses at the 400-level or above

In Computing: At least one course chosen from ITP 110X, ITP 150X, ITP 165X, CSCI 101L

Electives must be approved by the program advisers.

Language

Those students intending to go on to graduate school should satisfy the language requirement in French, German or Russian.

Progressive Degree Programs in Mathematics

Outstanding undergraduate students may apply for a master's degree in any area for which their major is relevant. If accepted into the master's degree program, the student may work simultaneously toward their bachelor's degree and the master's degree. To apply for a master's degree, a student must have completed at least 64 units, but fewer than 96 units, toward their major. The application requires two letters of recommendation from USC faculty, at least one of whom must be in the department of the student's major. For more information on progressive degree programs, see page 87xx.

Graduate Degrees

Admission Requirements

All applicants must take the Graduate Record Examinations General Test.

Master of Arts and Doctor of Philosophy in Mathematics and in Applied Mathematics

A substantial undergraduate background in mathematics which includes one year of real analysis (MATH 425ab), one semester of abstract algebra (MATH 410) and one semester of upper-division linear algebra (MATH 471) is required. Students enrolled in one of the department's master of science or arts programs must

complete the Ph.D. screening procedure prior to admission to a Ph.D. program.

Master of Science in Applied Mathematics, in Statistics and in Computational Molecular Biology

A substantial undergraduate background in mathematics which includes one semester of real analysis or advanced calculus and one semester of linear algebra is required.

Regular admission pending completion during the first year of graduate studies of prerequisite undergraduate mathematics may be considered for applicants who otherwise qualify for the program.

Degree Requirements

These degrees are under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue (page 97xx) for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School.

Master of Science in Applied Mathematics

This program is intended for individuals who are seeking or currently hold positions which involve mathematical applications, or for mid-career people wishing to improve their skills in applied areas. Specific options in the program include: biomedicine, discrete mathematics, economics, finance and business economics, fluid dynamics, numerical analysis and computation, and systems and control. In addition, students may design their own option to suit specific needs.

On admission to the program, each student is assigned an option adviser. The adviser serves on the student's qualifying exam committee and assists the student in determining the courses of study in the selected option. Courses of instruction are drawn from the Department of Mathematics and other participating departments which include: aerospace engineering, biomedical engineering, civil engineering, computer science, economics, electrical engineering, business administration, mechanical engineering, physiology and biophysics, and preventive medicine.

REQUIRED COURSES		UNITS
MATH 501	Numerical Analysis and Computation	3
MATH 505ab	Applied Probability	3-3
MATH 570a	Methods of Applied Mathematics	3
MATH 601	Optimization Theory and Techniques	3

plus at least 15 units of elected option courses

In addition, registration in MATH 594ab and a master's thesis is required for all students. This thesis is the end product of a practicum in the selected option. The practicum is supervised by the student's qualifying exam committee.

For this program students are not required to take the screening examination or to satisfy a foreign language requirement.

Master of Science in Mathematical Finance

See Mathematical Finance, page 401xx.

Master of Science in Statistics

The object of this program is to provide academic instruction in statistical theory with a solid mathematical foundation while emphasizing applications to real world problems. Some probability theory is included to provide a rigorous foundation. The program is intended for individuals who are seeking or currently hold positions that involve statistical methodology and practice. A student may orient his or her course of study toward a particular field of application through appropriate selections from the program listings plus elective courses from other disciplines.

Course Requirements

Thirty units of course work are required, including:

REQUIRED COURSES		UNITS
MATH 541ab	Introduction to Mathematical Statistics	3-3
MATH 650	Seminar in Statistical Consulting	3

and one from each of options A, B, C:

(A)		
MATH 505a	Applied Probability	3
MATH 507a	Theory of Probability	3

(B)		
MATH 542L	Analysis of Variance and Design	3
MATH 545L	Introduction to Time Series	3

(C)		
MATH 501	Numerical Analysis and Computation	3
MATH 502a	Numerical Analysis	3
PM 511a	Data Analysis	4

plus at least 12 units of adviser-approved courses

Students may opt for a master's thesis (and registration in MATH 594ab) or a written examination covering material from MATH 505a or MATH 507a, and MATH 541ab. The examination will normally be given at the end of the fall semester. Students must pass MATH 505a or MATH 507a, and MATH 541ab with a grade of B or higher. If a student receives a grade of B- or lower in any of these courses, the requirement can be waived upon passing the screening exam for the course at the master's level or higher.

Master of Science in Computational Molecular Biology

The computational molecular biology program is designed to attract recent graduates in either mathematics, statistics, biology or computer science, or scientists and engineers interested in retraining. A commercial or laboratory internship is required. Students will be prepared for employment in the rapidly expanding areas of computational molecular biology and bioinformatics. The program has two tracks, appropriate for different undergraduate backgrounds: biology and mathematical science. The required courses for each track are indicated below.

REQUIRED COURSES		UNITS
<i>Biological Sciences</i>		
BISC 403***	Advanced Molecular Biology	4
BISC 478**	Computational Genome Analysis	4
BISC 505*	Genomics and Molecular Genetics	4
BISC 542*	Seminar in Molecular Biology	3
BISC 577ab*	Computational Molecular Biology Laboratory	2-2
<i>Computer Science</i>		
CSCI 485**	File and Database Management	3
CSCI 570***	Analysis of Algorithms	3
<i>Mathematics</i>		
MATH 407**	Probability Theory	4
MATH 408**	Mathematical Statistics	4
MATH 505a***	Applied Probability	3
MATH 541a***	Introduction to Mathematical Statistics	3
MATH 578a***	DNA and Protein Sequence Analysis	3
MATH 592*	Computational Molecular Biology Internship	3
MATH 650*	Seminar in Statistical Consulting	3
Total units		32-33

*Both tracks

**Biology track

***Mathematical science track

Students are required to demonstrate skill in C++, Java or Perl, and to demonstrate knowledge of molecular biology at the level of BISC 320L. A substantial report on the commercial or laboratory internship must be submitted (for which enrollment in MATH 592 is required).

Master of Arts in Mathematics and Master of Arts in Applied Mathematics

The objective of the Master of Arts program is to prepare students for research, teaching and other professional careers in mathematics and applied mathematics, respectively. In addition to the algebra requirement and differential geometry/topology option for the Master of Arts in Mathematics, the two programs differ in emphasis: the Master of Arts in Mathematics emphasizes the core courses in pure mathematics, and the Master of Arts in Applied Mathematics emphasizes courses in mathematics and affiliated fields that are fundamental in applied mathematics.

Relationship to Ph.D. Programs in Mathematics and in Applied Mathematics

The two year M.A. program is an expansion of the first year of graduate studies in the Ph.D. program in mathematics (respectively, the Ph.D. program in applied mathematics). The program provides a rigorous foundation in mathematics (applied mathematics) while affording students additional time for preparatory training. The comprehensive examinations for the M.A. program can serve as the preliminary qualifying examination for either Ph.D. program, and the written Ph.D. qualifying examinations serve as comprehensive examinations for the corresponding Master of Arts degree.

Requirements for the Master of Arts in Mathematics

At least 24 units are required, including:

REQUIRED COURSES		UNITS
MATH 510ab	Algebra	3-3
MATH 520	Complex Analysis	3
MATH 525a	Real Analysis	3
and one option from A, B, C or D:		
(A)		
MATH 535a	Differential Geometry	3
MATH 540	Topology	3
(B)		
MATH 555a	Partial Differential Equations	3
MATH 565a	Ordinary Differential Equations	3
(C)		
MATH 507a	Theory of Probability	3
MATH 541b	Introduction to Mathematical Statistics	3
(D)		
MATH 502ab	Numerical Analysis	3-3

The degree is completed with either departmental examinations (two written examinations selected from the two required components and the optional component) or a thesis demonstrating research ability in pure mathematics (the thesis option requires four additional thesis units selected from MATH 594abz).

Requirements for the Master of Arts in Applied Mathematics

At least 24 units are required, including MATH 525a Real Analysis (3), and at least three from these courses:

MATH 502a	Numerical Analysis	3
MATH 502b	Numerical Analysis	3
MATH 505a	Applied Probability, or	
MATH 507a	Theory of Probability	3
MATH 505b	Applied Probability, or	
MATH 506	Stochastic Processes, or	
MATH 507b	Theory of Probability	3
MATH 541a	Introduction to Mathematical Statistics	3
MATH 541b	Introduction to Mathematical Statistics	3
MATH 555a	Partial Differential Equations	3
MATH 565a	Ordinary Differential Equations	3

Other elective courses, including those from other departments, have to be approved by the program adviser.

The degree is completed with either departmental comprehensive examinations (two examinations, one covering the required component MATH 525a, and the second covering one of the elective MATH courses) or a thesis demonstrating research ability in applied mathematics (the thesis option requires four additional thesis units selected from MATH 594abz).

Doctor of Philosophy in Applied Mathematics

Application deadline: January 1

The program requires a maximum effort by the student for a minimum of four years of full-time work.

Screening Procedure

The screening examination consists of four one-hour examinations covering the subject content of: MATH 502a Numerical Analysis; MATH 505a Applied Probability (or, at the student's discretion, MATH 507a Theory of Probability); MATH 525a Real Analysis; and MATH 541a Introduction to Mathematical Statistics.

The department offers the examinations twice a year, at the end of summer and at the beginning of the spring semester. All four parts of the screening examination must be attempted by the end of the third semester (not counting summer sessions) in the program. The students may take each of the exams as many times as they wish, but three of the exams must be successfully completed by the end of the fourth semester (not counting summer sessions) and all four must be successfully completed by the end of the sixth semester in the program. The qualifying examination should follow two or three semesters after the successful completion of the screening procedure.

Qualifying Exam Committee

No later than at the end of the first semester after passing the screening procedure the student must form a qualifying exam committee consisting of an adviser and four other faculty members, including at least one from another department.

Qualifying Examination

The written portion of the qualifying examination consists of a Ph.D. dissertation proposal. This document should include: introduction, statement of the problem, literature survey, methodology, summary of preliminary results, proposed research, references, appendix (including one or two fundamental references).

The oral portion of the qualifying examination consists of a presentation of the Ph.D. dissertation proposal. The student must demonstrate research potential.

Course Requirements

The student must complete, with no grade lower than B, a minimum of 60 units of courses carrying graduate credit and approved by the qualifying exam committee. These must include MATH 794ab and six courses from the following: MATH 502b, MATH 504ab, MATH 505b, MATH 507b, MATH 509, MATH 520, MATH 525b, MATH 530b, MATH 532, MATH 541b, MATH 542L, MATH 545, MATH 555a, MATH 565a, MATH 574, MATH 576, MATH 580, MATH 585.

Transfer of Credit

No transfer of credit will be considered until the screening examination is passed. A maximum of 30 units of graduate work at another institution may be applied toward the course requirements for the Ph.D. A grade of B- (A = 4.0) or lower will not be accepted and, at most, two grades of B will be accepted. A Ph.D. candidate may petition the department for transfer of additional credit, after he or she passes the qualifying examination.

Foreign Language Requirement

The student must demonstrate a reading comprehension of mathematics in one language (other than English) in which there is a significant body of research mathematics (such as Chinese, French, German, Japanese and Russian) by passing a written examination,

administered by the Mathematics Department, in translation of mathematical content.

Dissertation

Following passage of the screening examination and approval of a dissertation topic by the qualifying exam committee, the student begins research toward the dissertation under the supervision of the dissertation committee. The primary requirement of the Ph.D. is an acceptable dissertation based on a substantial amount of original research conducted by the student.

Research Areas

Opportunities for research are available from the faculty in several areas of applied mathematics with an emphasis on: computational biology, control theory, financial mathematics, mathematical neurosciences, numerical analysis, optimization, scientific computing, statistical genetics, statistics and stochastic differential equations.

Doctor of Philosophy in Mathematics

Application deadline: January 1

The program requires the maximum endeavor by the student for normally a minimum of four years of full-time work.

The student must choose between two concentrations: Pure Mathematics or Pure and Applied Mathematics.

Screening Procedure

Appointment of a qualifying exam committee and retention in the doctoral program are contingent on passing the preliminary qualifying examination by the end of the second semester. If a student fails the examination, the department, at its discretion, may permit the student to take it again during the third semester of graduate studies.

The preliminary qualifying exam is a written two-hour examination administered by the department. The student must choose between two options: analysis or algebra. Each option approximately covers the content of two one-semester graduate courses, with the precise list of possible topics made available to the student by the department.

Course Requirements

The student must complete with no grade lower than B a minimum of 60 units of courses carrying graduate credit and approved by the qualifying exam committee.

Pure Mathematics Concentration

REQUIRED COURSES		UNITS
MATH 510a	Algebra	3
MATH 525a	Real Analysis	3
MATH 535a	Differential Geometry	3
MATH 794ab	Doctoral Dissertation	2-2

Five courses selected from the following:

MATH 507a	Theory of Probability	3
MATH 510b	Algebra	3
MATH 520	Complex Analysis	3
MATH 525b	Real Analysis	3
MATH 532	Combinatorial Analysis	3
MATH 540	Topology	3

MATH 555a	Partial Differential Equations	3
MATH 565a	Ordinary Differential Equations	3

Pure and Applied Mathematics Concentration

REQUIRED COURSES		UNITS
MATH 502a	Numerical Analysis	3
MATH 510a	Algebra	3
MATH 525a	Real Analysis	3
MATH 794ab	Doctoral Dissertation	2-2

Five courses selected from the following:

MATH 502b	Numerical Analysis	3
MATH 507a	Theory of Probability	3
MATH 520	Complex Analysis	3
MATH 525b	Real Analysis	3
MATH 532	Combinatorial Analysis	3
MATH 541a	Introduction to Mathematical Statistics	3
MATH 555a	Partial Differential Equations	3
MATH 565a	Ordinary Differential Equations	3

Transfer of Credit

No transfer of credit will be considered until the screening examination is passed. Normally a maximum of 30 units of graduate work at another institution may be applied toward the course requirements for the Ph.D. A grade of B- or lower will not be accepted, and, at most, two grades of B will be accepted. A Ph.D. candidate may petition the department for transfer of additional credit after passing the qualifying examination.

Foreign Language Requirement

The student must demonstrate a reading comprehension of mathematics in one language (other than English) in which there is a significant body of research mathematics (such as Chinese, French, German, Japanese and Russian) by passing a written examination, administered by the department, in translation of mathematical content.

Qualifying Examination

The written portion of the qualifying examination is comprehensive, consisting of two, two-hour examinations administered by the department. These examinations cover two out of the following five options, excluding the option already selected for the preliminary examination: algebra, analysis, geometry/topology, probability/statistics, differential equations. Each option approximately covers the content of two, one-semester graduate courses, with the precise list of possible topics made available to the students by the department. The selection of options must be approved by the qualifying exam committee.

The oral portion of the qualifying examination covers one topic selected from department research areas in mathematics and approved by the qualifying exam committee. The student must demonstrate research potential in this field.

Dissertation

Following passage of the qualifying examination and approval of a dissertation topic by the qualifying exam committee, the student begins research toward the dissertation under the supervision of the dissertation committee. The primary requirement for the Ph.D. is an

acceptable dissertation which is based on a substantial amount of original research conducted by the student.

Research Areas

Opportunities for research are offered in the areas of algebraic geometry, arithmetic geometry, combinatorics, complex geometry, control theory, differential equations, differential geometry, dynamical systems, functional analysis, geometric analysis, group theory, K-theory, nonlinear analysis, number theory, numerical analysis, optimization, probability, representation theory, ring theory and topology.

Courses of Instruction

MATHEMATICS (MATH)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

MATH 040x Basic Mathematical Skills (4, FaSp) Intensive review of arithmetic and algebra. Not available for degree credit. Graded CR/NC.

MATH 108 Precalculus (4, FaSp) Equations and inequalities; functions; graphs; polynomial and rational functions; exponential, logarithmic, and trigonometric function; analytic geometry. *Prerequisite:* MATH 040x or passing of placement exam.

MATH 114x Foundations of Statistics (4, FaSpSm) An introduction to the basic tools of statistics. Descriptive statistics; probability; expected value; normal approximation sampling; chance models; tests of significance. Not available for major credit to Math students. *Recommended preparation:* MATH 040x or math placement exam.

MATH 116 Mathematics for the Social Sciences (4, FaSp) Finite mathematics with application to the social sciences; elementary set theory and logic; counting techniques; probability; statistics; matrices and systems of linear equations. Selected topics.

MATH 117 Introduction to Mathematics for Business and Economics (4, FaSp) Functions, graphs, polynomial and rational functions, exponential and logarithmic functions, matrices, systems of linear equations. *Prerequisite:* MATH 040x or math placement exam.

MATH 118x Fundamental Principles of the Calculus (4, FaSpSm) Derivatives; extrema. Definite integral; fundamental theorem of calculus. Extrema and definite integrals for functions of several variables. Not available for credit toward a degree in mathematics. *Prerequisite:* MATH 117 or math placement exam.

MATH 125 Calculus I (4, FaSpSm) Limits; continuity, derivatives and applications; antiderivatives; the fundamental theorem of calculus; exponential and logarithmic functions. *Prerequisite:* MATH 108 or math placement exam.

MATH 126 Calculus II (4, FaSpSm) A continuation of MATH 125: trigonometric functions; applications of integration; techniques of integration; indeterminate forms; infinite series; Taylor series; polar coordinates. *Prerequisite:* MATH 125.

MATH 127 Enhanced Calculus I (4, Fa) Applications of integration, review of techniques of integration, infinite sequences and series, some beginning linear algebra, ordinary differential equations. Designed for students who earn a score of 4 or 5 on the Advanced Placement Calculus AB Examination, or a score of 3 or 4 on the BC Examination. Admission to course by departmental approval. (Duplicates credit in MATH 126.)

MATH 200 Elementary Mathematics from an Advanced Standpoint (4, FaSp) An explication of arithmetic and geometry, including the algebraic operations, number bases, plane and solid figures; and coordinate geometry. *Prerequisite:* MATH 040x or math placement exam.

MATH 208x Elementary Probability and Statistics (4, FaSp) Descriptive statistics, probability concepts, discrete and continuous random variables, mathematical expectation and variance, probability sampling, Central Limit Theorem, estimation and hypothesis testing, correlation and regression. Not available for major credit to mathematics majors. *Prerequisite:* MATH 118x or MATH 125.

MATH 218 Probability for Business (4, FaSpSm) Basic probability, discrete and continuous distributions, expectation and variance, independence. Sampling, estimation, confidence intervals, hypothesis testing. *Prerequisite:* MATH 118x or MATH 125.

MATH 225 Linear Algebra and Linear Differential Equations (4, FaSp) Matrices, systems of linear equations, vector spaces, linear transformations, eigenvalues, systems of linear differential equations. *Prerequisite:* MATH 126.

MATH 226 Calculus III (4, FaSp) A continuation of MATH 126; vectors, vector valued functions; differential and integral calculus of functions of several variables; Green's theorem. *Prerequisite:* MATH 126.

MATH 227 Enhanced Calculus II (4, Sp) A continuation of MATH 127; vectors and vector spaces, functions of several variables, partial differential equations, optimization theory, multiple integration; Green's Stokes', divergence theorems. *Prerequisite:* MATH 127 or MATH 225.

MATH 245 Mathematics of Physics and Engineering I (4, FaSp) First-order differential equations; second-order linear differential equations; determinants and matrices; systems of linear differential equations; Laplace transforms. *Prerequisite:* MATH 226.

MATH 265 Mathematical and Computational Methods for Neuroscience (4, FaSp) Differential calculus of multivariable functions, optimization, elementary linear algebra and matrix theory, principal component analysis, elementary differential equations, systems, qualitative theory, numerical methods, scientific computation. *Prerequisite:* MATH 125; *recommended preparation:* MATH 126 or equivalent or AP credit for Calculus BC.

MATH 307 Statistical Inference and Data Analysis I (4, Fa) Probability, counting, independence, distributions, random variables, simulation, expectation, variance, covariance, transformations, law of large numbers, Central limit theorem, estimation, efficiency, maximum likelihood, Cramer-Rao bound, bootstrap. *Prerequisite:* MATH 118 or MATH 125.

MATH 308 Statistical Inference and Data Analysis II (4, Sp) Confidence intervals, hypothesis testing, p-values, likelihood ratio, nonparametrics, descriptive statistics, regression, multiple linear regression, experimental design, analysis of variance, categorical data, chi-squared tests, Bayesian statistics. *Prerequisite:* MATH 307.

MATH 370 Applied Algebra (4, Sp) Induction, Euclidean algorithm, factorization, congruence classes, Rings, RSA algorithm, Chinese remainder theorem, codes, polynomials, fundamental theorem of algebra, polynomial multiplication, Fourier transform, and other topics. *Prerequisite:* MATH 226; MATH 225 or MATH 245.

MATH 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

MATH 395 Seminar in Problem Solving (2, max 8) Systematic approach to solving non-standard and competition level math problems on inequalities, infinite sums and products, combinatorics, number theory, and games. *Recommended preparation:* MATH 126.

MATH 400 Foundations of Discrete Mathematics (4, Fa) Methods of proof, predicate calculus, set theory, order and equivalence relations, partitions, lattices, functions, cardinality, elementary number theory and combinatorics. *Prerequisite:* MATH 225 or MATH 226.

MATH 407 Probability Theory (4, FaSp) Probability spaces, discrete and continuous distributions, moments, characteristic functions, sequences of random variables, laws of large numbers, central limit theorem, special probability laws. *Prerequisite:* MATH 226.

MATH 408 Mathematical Statistics (4, Sp) Principles for testing hypotheses and estimation, small sample distributions, correlation and regression, nonparametric methods, elements of statistical decision theory. *Prerequisite:* MATH 407.

MATH 410 Fundamental Concepts of Modern Algebra (4, FaSp) Sets; relations; groups; homomorphisms; symmetric groups; Abelian groups; Sylow's theorems; introduction to rings and fields. *Prerequisite:* MATH 225.

MATH 425ab Fundamental Concepts of Analysis (a: 4, FaSp; b: 4, Sp) *a:* The real number system, metric spaces, limits, continuity, derivatives and integrals, infinite series. *b:* Implicit function theorems, Jacobians, transformations, multiple integrals, line integrals. *Prerequisite:* MATH 226; MATH 425a before MATH 425b.

MATH 430 Theory of Numbers (4, Fa) Introduction to the theory of numbers, including prime factorization, congruences, primitive roots, N-th power residues, number theoretic functions, and certain diophantine equations. *Prerequisite:* MATH 126.

MATH 432 Applied Combinatorics (4, Sp) Mathematical induction, counting principles, arrangements, selections, binomial coefficients, generating functions, recurrence relations, inclusion-exclusion, symmetric groups, graphs, Euler and Hamiltonian circuits, trees, graph algorithms; applications. *Prerequisite:* MATH 225 or MATH 226.

MATH 434 Geometry and Transformations (4, Fa) Incidence and separation properties of planes and spaces. Geometric inequalities, models of Riemannian and hyperbolic geometry. Isometries, Jordan measure, constructions, and affine geometry.

MATH 435 Vector Analysis and Introduction to Differential Geometry (4, Sp) Vectors, elements of vector analysis, applications to curves and surfaces, standard material of differential geometry. *Prerequisite:* MATH 226.

MATH 440 Topology (4, Fa) Cardinals, topologies, separation axioms. Compactness, metrizability, function spaces; completeness; Jordan curve theorem. *Recommended preparation:* upper-division MATH course.

MATH 445 Mathematics of Physics and Engineering II (4, FaSp) Vector field theory; theorems of Gauss, Green, and Stokes; Fourier series and integrals; complex variables; linear partial differential equations; series solutions of ordinary differential equations. *Prerequisite:* MATH 245.

MATH 450 History of Mathematics (4, Sp) Evolution of mathematical ideas and techniques as seen through a study of the contributions of eminent mathematicians to the formulation and solution of celebrated problems. *Prerequisite:* MATH 225 or MATH 245; *recommended preparation:* upper-division MATH course.

MATH 458 Numerical Methods (4, Fa) Rounding errors in digital computation; solution of linear algebraic systems; Newton's method for nonlinear systems; matrix eigenvalues; polynomial approximation; numerical integration; numerical solution of ordinary differential equations. *Prerequisite:* MATH 225 or MATH 245.

MATH 465 Ordinary Differential Equations (4, Sp) Linear systems, phase plane analysis, existence and uniqueness, stability of linear and almost linear systems, Lyapunov's method, nonlinear oscillations, flows, invariant surfaces, and bifurcation. *Prerequisite:* MATH 225 or MATH 245.

MATH 466 Dynamic Modeling (4, Fa) Formulation and study of models arising in population dynamics, growth of plankton, pollution in rivers, highway traffic, morphogenesis and tidal dynamics: stability, oscillations, bifurcations, chaos. The lab will consist of computer simulation of models using commercially available software. *Prerequisite:* MATH 225 or MATH 245.

MATH 467 Theory and Computational Methods for Optimization (4) Methods for static, dynamic, unconstrained, constrained optimization. Gradient, conjugate gradient, penalty methods. Lagrange multipliers, least squares, linear, nonlinear dynamic programming. Application to control and estimation. *Prerequisite:* MATH 226; MATH 225 or MATH 245.

MATH 471 Topics in Linear Algebra (4, Sp) Polynomial rings, vector spaces, linear transformations, canonical forms, inner product spaces. *Prerequisite:* MATH 225; *recommended preparation:* MATH 410.

MATH 475 Introduction to Theory of Complex Variables (4, Sp) Limits and infinite series; line integrals; conformal mapping; single-valued functions of a complex variable; applications. Primarily for advanced students in engineering. *Prerequisite:* MATH 226.

MATH 490x Directed Research (1–8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

MATH 499 Special Topics (2–4, max 8) Lectures on advanced material not covered in regularly scheduled courses. No more than two registrations allowed.

MATH 500 Graduate Colloquium (2) Lectures directed to mathematics graduate students by faculty of the department and by outside speakers. Problem solving workshops. Graded CR/NC.

MATH 501 Numerical Analysis and Computation (3, Sp) Linear equations and matrices, Gauss elimination, error estimates, iteration techniques; contractive mappings, Newton's method; matrix eigenvalue problems; least-squares approximation, Newton-Cotes and Gaussian quadratures; finite difference methods. *Prerequisite:* linear algebra and calculus.

MATH 502ab Numerical Analysis (a: 3, Fa; b: 3, Sp) Computational linear algebra; solution of general nonlinear systems of equations; approximation theory using functional analysis; numerical solution of ordinary and partial differential equations. *Prerequisite:* MATH 425a and MATH 471.

MATH 504ab Numerical Solution of Ordinary and Partial Differential Equations (a: 3, Sp; b: 3, Fa) *a:* Initial value problems; multistep methods, stability, convergence and error estimation, automatic stepsize control, higher order methods, systems of equations, stiff problems; boundary value problems; eigenproblems. *Prerequisite:* MATH 501 or MATH 502a. *b:* Computationally efficient schemes for solving PDE numerically; stability and convergence of difference schemes, method of lines; fast direct and iterative methods for elliptic equations. *Prerequisite:* MATH 501 or MATH 502a.

MATH 505ab Applied Probability (a: 3, Fa; b: 3, Sp) *a:* Populations, permutations, combinations, random variables, distribution and density functions conditional probability and expectation, binomial, Poisson, and normal distributions; laws of large numbers, central limit theorem. *b:* Markov processes in discrete or continuous time; renewal processes; martingales; Brownian motion and diffusion theory; random walks, inventory models, population growth, queuing models, shot noise.

MATH 507ab Theory of Probability (a: 3, Fa; b: 3, Sp) *a:* Probability spaces; distributions and characteristic functions; laws of large numbers, central limit problems; stable and infinitely divisible laws; conditional distributions. *Prerequisite:* MATH 525a or MATH 570. *b:* Dependence, martingales, ergodic theorems, second-order random functions, harmonic analysis, Markov processes.

MATH 508 Filtering Theory (3) Theory of random differential equations and stochastic stability; optimum linear and nonlinear filtering, with discussion of asymptotic behavior of filter. *Prerequisite:* MATH 507a.

MATH 509 Stochastic Differential Equations (3) Brownian motion, stochastic integrals, the Ito formula, stochastic differential equations, analysis of diffusion processes, Girsanov transformation, Feynmann-Kac formula, applications. *Prerequisite:* MATH 505ab or MATH 507ab.

MATH 510ab Algebra (a: 3, Fa; b: 3, Sp) *a:* Group Theory: Isomorphism theorems, group actions, Sylow's theorems, simple and solvable groups; Field Theory: Galois correspondence, radical extensions, algebraic and transcendental extensions, finite fields. *b:* Commutative Algebra: Integrality, Hilbert Basis theorem, Hilbert Nullstellensatz; Modules: modules over PIDs, chain conditions, tensor products; Noncommutative Rings: Jacobson radical, Artin-Wedderburn theorem, Maschke's theorem. *Prerequisite:* MATH 410, MATH 471.

MATH 511abL Data Analysis (4-4) (Enroll in PM 511abL)

MATH 512 Financial Informatics and Simulation (Computer Labs and Practitioner Seminar) (3, FaSp) Experimental laboratory trading for financial markets using double auctions: handling statistical packages for data analysis. Practical training in virtual market environments, using financial trading system software.

MATH 520 Complex Analysis (3, Sp) Theory of analytic functions — power series and integral representations, calculus of residues, harmonic functions, normal families, approximation theorems, conformal mapping, analytical continuation. *Prerequisite:* MATH 425ab.

MATH 525ab Real Analysis (a: 3, Fa; b: 3, Sp) *a:* Measure and integration over abstract measure spaces, Radon-Nikodym theorem, Fubini's theorem, convergence theorems, differentiation. *Prerequisite:* MATH 425ab. *b:* Metric spaces, contraction principle, category, Banach spaces, Riesz representation theorem, properties of L_p Hilbert spaces, orthogonal expansions, Fourier series and transforms, convolutions. *Prerequisite:* MATH 525a.

MATH 530ab Stochastic Calculus and Mathematical Finance (a: 3, b: 3, Sp) *a:* Stochastic processes revisited, Brownian motion, Martingale theory, stochastic differential equations, Feynman-Kac formula, binomial models, basic concepts in arbitrage pricing theory, equivalent Martingale measure. (Duplicates credit in the former MATH 503.) *Recommended preparation:* MATH 225, MATH 407; *b:* Advanced topics in stochastic analysis, asset pricing in continuous time, stochastic control, Hamilton-Jacobi-Bellman equations, incomplete markets, American options, exotic options, term structure of interest rates. (Duplicates credit in the former MATH 506.)

MATH 532 Combinatorial Analysis (3, Fa) Inversion formulas, generating functions and recursions, partitions, Stirling numbers, distinct representatives, Ramsey's theorem, graph theory, block designs, difference sets, finite geometries, Latin squares, Hadamard matrices.

MATH 533 Combinatorial Analysis and Algebra (3, Sp) Advanced group theory; algebraic automata theory; graph theory; topics in combinatorial analysis.

MATH 535ab Differential Geometry (a: 3, Fa; b: 3, Sp) Elementary theory of manifolds, Lie groups, homogeneous spaces, fiber bundles and connections. Riemannian manifolds, curvature and conjugate points, second fundamental form, other topics. *Prerequisite:* MATH 440.

MATH 540 Topology (3, Sp) Initial and final topologies, function spaces, algebras in $C(Y)$, homotopy, fundamental group, fiber spaces and bundles, smash products, loop spaces, groups of homotopy classes, CW-complexes. *Prerequisite:* MATH 440.

MATH 541ab Introduction to Mathematical Statistics (a: 3, Sp; b: 3, Fa) *a:* Parametric families of distributions, sufficiency. Estimation: methods of moments, maximum likelihood, unbiased estimation. Comparison of estimators, optimality, information inequality, asymptotic efficiency. EM algorithm, jackknife and bootstrap. *Prerequisite:* MATH 505a or MATH 407 or MATH 408. *b:* Hypothesis testing, Neyman-Pearson lemma, generalized likelihood ratio procedures, confidence intervals, consistency, power, jackknife and bootstrap. Monte Carlo Markov chain methods, hidden Markov models. *Prerequisite:* MATH 541a.

MATH 542L Analysis of Variance and Design (3, Sp) Least squares estimation in the linear model, analysis of variance and covariance, F-test, multiple comparisons, multiple regression, selection of variables; introduction to experimental design. Includes laboratory. *Prerequisite:* MATH 225, MATH 226, and MATH 208x.

MATH 543L Nonparametric Statistics (3) Distribution-free methods for comparisons of two or more samples, tests of randomness, independence, goodness of fit; classification, regression. Comparison with parametric techniques. Includes laboratory. *Prerequisite:* MATH 226, MATH 208x.

MATH 544L Multivariate Analysis (3) (Enroll in PM 544L)

MATH 545L Introduction to Time Series (3, Fa)
Transfer function models; stationary, nonstationary processes; moving average, autoregressive models; spectral analysis; estimation of mean, autocorrelation, spectrum; seasonal time series. Includes laboratory. *Prerequisite:* MATH 225, MATH 226, and MATH 208x.

MATH 546 Statistical Computing (3) (Enroll in PM 546)

MATH 547 Methods of Statistical Inference (3, Fa)
Statistical decision theory: game theory, loss and risk functions; Bayes, minimax, admissible rules; sufficiency, invariance, tests of hypotheses, optimality properties. Inference for stochastic processes. *Prerequisite:* MATH 407 or MATH 408.

MATH 548 Sequential Analysis (3) Sequential decision procedures: sequential probability-ratio tests, operating characteristic, expected sample size, two-stage procedures, optimal stopping, martingales, Markov processes; applications to gambling, industrial inspection. *Prerequisite:* MATH 407 or MATH 408.

MATH 550 Sample Surveys (3, Sp) Theory of sampling and design of sample surveys; bias and precision; finite populations; stratification; cluster sampling; multistage, systematic sampling; non-sampling errors. *Prerequisite:* MATH 208x.

MATH 555ab Partial Differential Equations (a: 3, Fa; b: 3, Sp) Second-order partial differential equations of elliptic, parabolic, and hyperbolic type; in particular, potential and wave equations. *Prerequisite:* MATH 425ab.

MATH 565ab Ordinary Differential Equations (a: 3, Fa; b: 3, Sp) Existence, uniqueness and continuation of solutions, differential inequalities, linear systems, Sturm-Liouville theory, boundary value problems, Poincaré-Bendixson theory, periodic solutions, perturbations, stability, fixed point techniques. *Prerequisite:* MATH 425ab.

MATH 570ab Methods of Applied Mathematics (a: 3, FaSp; b: 3, Sp) *a:* Metric spaces, fundamental topological and algebraic concepts, Banach and Hilbert space theory. *Prerequisite:* MATH 425a. *b:* Hilbert spaces, normal, self-adjoint and compact operators, geometric and spectral analysis of linear operators, elementary partial differential equations. *Prerequisite:* MATH 570a.

MATH 572 Applied Algebraic Structures (3, Fa)
Elementary predicate logic, model theory, axiomatic set theory; relations, functions, equivalences; algebraic and relational structures; graph theory; applications of lattices, Boolean algebras; groups, rings, field.

MATH 574 Applied Matrix Analysis (3, Fa) Equivalence of matrices; Jordan canonical form; functions of matrices; diagonalization; singular value decomposition; applications to linear differential equations, stability theory, and Markov processes.

MATH 576 Applied Complex Analysis and Integral Transforms (3, Fa) Review of basic complex analysis; integral transforms of Laplace, Fourier, Mellin, and Hankel; applications to solutions of ordinary and partial differential equations; Wiener-Hopf technique. *Prerequisite:* MATH 475 or MATH 520.

MATH 577ab Computational Molecular Biology Laboratory (a: 2, Sp; b: 2, Fa) (Enroll in BISC 577ab)

MATH 578ab Computational Molecular Biology (3-3, FaSp) Applications of the mathematical, statistical and computational sciences to data from molecular biology. *a:* Algorithms for genomic sequence data: sequence and map assembly and alignment, RNA secondary structure, protein structure, gene-finding, and tree construction. *Prerequisite:* CSCI 570; *recommended preparation:* familiarity with the concepts of basic molecular biology as covered in BISC 320. *b:* Statistics for genomic sequence data: DNA sequence assembly, significance of alignment scores, hidden Markov models, genetic mapping, models of sequence evolution, and microarray analysis. *Prerequisite:* MATH 505a, MATH 541a.

MATH 580 Introduction to Functional Analysis (3) Basic functional analysis in Banach and Hilbert spaces. Weak topologies, linear operators, spectral theory, calculus of vector-valued functions. Banach algebras. *Prerequisite:* MATH 525ab.

MATH 585 Mathematical Theory of Optimal Control (3, Fa) Deterministic control: calculus of variations; optimal control; Pontryagin principle; multiplier rules and abstract nonlinear programming; existence and continuity of controls; problem of Mayer; dynamic programming. *Prerequisite:* MATH 570 and MATH 525a.

MATH 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MATH 592 Computational Molecular Biology Internship (3) Industrial or genome-centered internship for students in the Computational Molecular Biology master's program. Real-world experience in applications. Open to M.S., Computational Molecular Biology students only.

MATH 593 Practicum in Teaching the Liberal Arts (2, FaSp) (Enroll in MDA 593)

MATH 594abz Master's Thesis (2-2-0, FaSpSm) Credit on acceptance of thesis. Graded IP/CR/NC.

MATH 599 Special Topics (2-4, max 8, FaSpSm) Course content will be selected each semester to reflect current trends and developments in the field of mathematics.

MATH 600 Topics in Numerical Analysis (3, max 12)

MATH 601 Optimization Theory and Techniques (3, SpSm) Necessary and sufficient conditions for existence of extrema with equality constraints; gradient methods; Ritz methods; eigenvalue problems; optimum control problems; inequality constraints; mathematical programming. *Prerequisite:* MATH 502ab.

MATH 602 Galerkin Approximation Methods in Partial Differential Equations (3) Galerkin methods of approximating solutions of elliptic boundary value problems in one and several dimensions; includes the use of spline functions and triangularizations.

MATH 605 Topics in Probability (3, max 12)

MATH 606 Topics in Stochastic Processes (3, max 12, FaSpSm) Theoretic and applied topics of current interest in discrete and continuous time stochastic processes and in stochastic differential equations. *Recommended preparation:* graduate level course in probability theory or stochastic processes.

MATH 610 Topics in Algebra (3, max 12)

MATH 612 Topics in Commutative Ring Theory (3, max 12) Localization, structure of Noetherian rings, integral extensions, valuation theory, graded rings, characteristic functions, local algebra, dimension theory. *Prerequisite:* MATH 510ab.

MATH 613 Topics in Noncommutative Ring Theory (3, max 12) Jacobson radical, nil radical, nil rings and nil-potence, chain conditions, polynomial identity and group rings. Goldie theorems, current research. *Prerequisite:* MATH 510ab.

MATH 620 Topics in Complex Analysis (3, max 12)

MATH 625 Topics in Real Analysis (3, max 12)

MATH 630 Topics in Number Theory (3, max 12)

MATH 635 Topics in Differential Geometry (3, max 12) Topics to be chosen from the following: geometry of complex manifolds, relations between topology and curvature, homogeneous spaces, symmetric spaces, geometry of submanifolds. *Prerequisite:* MATH 535ab.

MATH 641 Topics in Topology (3, max 12)

MATH 650 Seminar in Statistical Consulting (3)

MATH 655 Topics in Partial Differential Equations (3, max 12, FaSpSm) Topics to be chosen from the following: Elliptic, Parabolic, Hyperbolic, and Dispersive PDEs, Conservation Laws, Mathematical Fluid Dynamics and Variational Methods. *Prerequisite:* MATH 525a; *recommended preparation:* MATH 555a.

MATH 665 Topics in Ordinary Differential Equations (3, max 12)

MATH 680 Nonlinear Functional Analysis (3) Calculus in Banach spaces, degree theory, fixed point theorems. Study of compact, monotone, accretive and nonexpansive operators. *Prerequisite:* MATH 580.

MATH 681 Selected Topics in Functional Analysis (3, max 12) Course content will vary with professor and academic year offered. It will include topics of current interest in both linear and nonlinear functional analysis and their applications.

MATH 685 Topics in Mathematical Control Theory (3, max 12)

MATH 689 Topics in Mathematical Physics (3, max 12)

MATH 700 Seminar in Numerical Analysis (3)

MATH 705 Seminar in Probability (3)

MATH 710 Seminar in Algebra (3)

MATH 725 Seminar in Analysis (3)

MATH 730 Seminar in Number Theory (3)

MATH 735 Seminar in Differential Geometry (3)

MATH 740 Seminar in Topology (3)

MATH 761 Seminar in Programming and Computability (3)

MATH 765 Seminar in Ordinary Differential Equations (3)

MATH 780 Seminar in Functional Analysis (3)

MATH 790 Research (1-12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MATH 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC.

Middle East Studies

Taper Hall of Humanities 449

(213) 740-2795

FAX: (213) 740-9354

Email: mdes@dornsife.usc.edu

dornsife.usc.edu/mesp

Director: Kevin van Bladel, Ph.D. (Classics)

Faculty

John Elliott Chair in Economics: M. Hashem Pesaran, Ph.D. (Economics)

Robert Grandford Wright Professor in International Relations: Laurie A. Brand, Ph.D. (International Relations)

Professors: Richard Dekmejian, Ph.D. (Political Science); Jeffrey B. Nugent, Ph.D. (Economics and Business); Azade-Ayşe Rorlich, Ph.D. (History and Slavic Languages and Linguistics); Bruce Zuckerman, Ph.D. (Religion and Linguistics)

Associate Professors: Sarah Gulatieri, Ph.D. (History and American Studies and Ethnicity); Kevin van Bladel, Ph.D. (Classics); Ramzi Roughi, Ph.D. (History)

Assistant Professors: Christelle Fischer-Bovet, Ph.D. (Classics); Olivia Harrison, Ph.D. (French and Italian); Megan Reid (Religion and Gender Studies)

Associate Professor (Teaching): Jamal Ali, Ph.D.

Assistant Professor (Teaching): Peyman Nojournian, Ph.D.

Lecturers: Lynn Swartz Dodd, Ph.D. (Religion); Faye Hammad, Ph.D. (Political Science); Rym Kaki, Ph.D. (Public Policy); Lina Kholaki, Ph.D.; Suzan Wali, Ph.D.

Bachelor of Arts in Middle East Studies

This major is an interdisciplinary degree which draws on courses from anthropology, classics, economics, history, international relations, Judaic studies, linguistics, political science and religion. It offers students interested in exploring the richness and complexity of the Middle East, broadly defined as extending from Morocco through Iran, a framework for developing both expertise and wide-ranging critical perspectives on the region's past, present and future. The variety of courses

will allow students to tailor their choices to a range of possible emphases. Two options are also available regarding language study. The first, which is strongly recommended for all students, but especially for those who seek to pursue a career using Middle East studies, stresses the importance of a regional language (at this point, Arabic, Hebrew or Persian), along with other disciplinary offerings. The second allows students to gain an in-depth understanding of the region, but without the requirement of a regional language.

Requirements for the degree are: HIST 180 (an introductory survey course) which is a prerequisite for the major. Students must also take: a) seven more courses, six of which must be upper-division courses, chosen from MDES courses or from the list below; b) an eighth course, which may be either an upper-division course from the MDES courses or from the list below or the fourth semester of Arabic or Hebrew for those studying a regional language.

No more than two courses may be counted toward this major and another major.

REQUIRED COURSES		UNITS
HIST 180	The Middle East	4
Seven of the following courses, six of which must be upper-division courses:		
ANTH 327	Anthropology of the Middle East and Islam	4
ANTH 335	Comparative Muslim Societies	4
CLAS 360	Classical Arabic Literature in Translation	4
ECON 322	Economic History and Modernization of the Middle East	4
ECON 342	Economic Development of the Middle East	4
HEBR 315	Biblical Hebrew Literature (Hebrew IV)	4
HIST 275	The Worlds of the Silk Road	4
HIST 324	Islam in Russia and the Soviet Union	4
HIST 480	Seminar in Middle East History	4, max 8
JS 214	Zionism, Israel and the Modern World	4

JS 361	Scripture and Polemic in Judaism, Christianity and Islam	4
LING 295	The Ancient Near East: Culture, Archaeology, Texts	4
MDES 252*	Arabic IV	4
POSC 351	Middle East Politics	4
REL 315	Thought and Life of Islam	4
REL 317	Ancient Near Eastern Myth and Literature	4
REL 394	Archaeology of Egypt and the Near East	4
REL 494	Lab Methods and Theories in Archeology	4

*Counts as an upper-division course

Students majoring in Middle East studies are strongly encouraged to study in the Middle East in one of USC's study abroad programs. USC currently has programs at the American University in Cairo, the Hebrew University (Jerusalem) and Tel Aviv University.

Unlike the other majors offered through the School of International Relations, advisement for the Middle East major is done through the Dornsife College Advising Office.

Minor in Iranian Studies

The Iranian Studies minor provides students with the foundation for an advanced understanding of Iran, its history, peoples, and cultures, from antiquity to the present. Neighboring countries that participated in Persian culture are included, as well as non-Persian Iranian peoples such as the Kurds and Pashtuns. Students finishing this minor will also have at least an intermediate ability in Persian, the official language of Iran, widely used in neighboring countries as well.

The Middle East Studies Program offers a minor in Iranian Studies for students majoring in other disciplines.

REQUIRED COURSES, LOWER DIVISION		UNITS
MDES 120	Persian I	4
MDES 150	Persian II	4
MDES 220	Persian III	4
MDES 250	Persian IV	4

Some or all of these may be waived by placement examination.

REQUIRED COURSES, UPPER DIVISION**UNITS**

Four courses (16 units) from the following:

MDES 312	Iran in the Middle Ages	4
MDES 313	Modern Iran	4
MDES 320	Advanced Persian I	4
MDES 324	Classical Persian Literature in Translation	4
MDES 325	Modern Persian Literature in Translation	4
MDES 350	Advanced Persian II	4
MDES 461	Topics in Ancient Iranian Languages and Cultures	4

One of these four may alternatively be chosen from the following list of upper-division courses that cover material relevant to Iran or which situate an aspect of Iran in a broader context.

ANTH 335	Comparative Muslim Societies	4
CLAS 360	Classical Arabic Literature in Translation [covers period 500–1500]	4
HIST 324	Islam in Russia and the Soviet Union	4
HIST 382	The Middle East, 500–1500	4
POSC 351	Middle East Politics	4
REL 315	Thought and Life of Islam	4
REL 316	Women and the Islamic Tradition	4
REL 414	History of Islamic Law	4

Minor in Middle East Studies

Drawing on courses from nine different departments, this interdisciplinary minor offers students interested in exploring the richness and complexity of the Middle East, broadly defined as extending from Morocco through Iran, a framework for developing a basic but solid understanding of the region. Students may select courses that provide a broad introduction across disciplines, or they may choose courses that address a particular historical period or theme.

Twenty units (five courses) are required. All students must take HIST 180. To complete the minor a student must also take four upper-division courses from the list below from at least three departments. Students who are also studying Arabic may substitute MDES 252 Arabic IV for one of the four upper-division courses. However there is no language requirement for the minor.

REQUIRED COURSES**UNITS**

HIST 180	The Middle East	4
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Four of the following courses:

ANTH 327	Anthropology of the Middle East and Islam	4
ANTH 335	Comparative Muslim Societies	4
CLAS 360	Classical Arabic Literature in Translation	4
ECON 322	Economic History and Modernization of the Middle East	4
ECON 342	Economic Development of the Middle East	4
HEBR 315	Biblical Hebrew Literature (Hebrew IV)	4

HIST 324	Islam in Russia and the Soviet Union	4
HIST 382	The Middle East, 500–1500	4
HIST 384	Popular Culture in the Middle East	4
HIST 480	Seminar in Middle East History	4, max 8
IR 362	The International Relations of the Contemporary Middle East	4
IR 363	Middle East Political Economy	4
JS 361	Scripture and Polemic in Judaism, Christianity and Islam	4
JS 465	Medieval Jewish Philosophy	4
MDES 252	Arabic IV	4
POSC 351	Middle East Politics	4
REL 315	Thought and Life of Islam	4
REL 317	Ancient Near Eastern Myth and Literature	4
REL 394	Archaeology of Egypt and the Near East	4
REL 494	Advanced Near Eastern and Mediterranean Archaeology	4

Unlike the other minors offered through the School of International Relations, advisement for the Middle East minor is done through the Dornsife College Advising Office.

Courses of Instruction**MIDDLE EAST STUDIES (MDES)**

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

MDES 120 Persian I (4) Introduction to contemporary Persian (Farsi). Oral practice, listening and reading comprehension, grammar and vocabulary necessary for simple spoken and written expression.

MDES 122 Arabic I (4, FaSp) Introduction to modern standard Arabic: Development of speaking, listening, reading, and writing skills in contemporary cultural contexts.

MDES 150 Persian II (4) Continuation of Persian I. *Prerequisite:* MDES 120.

MDES 152 Arabic II (4, FaSp) Continuation of Arabic I. *Prerequisite:* MDES 122.

MDES 220 Persian III (4) Intermediate Persian (Farsi). Building conversational skills, listening and reading comprehension, grammar and vocabulary necessary for intermediate level spoken and written expression. *Prerequisite:* MDES 150.

MDES 222 Arabic III (4, FaSp) Intermediate modern standard Arabic. Continued development of speaking, listening, reading, and writing skills. *Prerequisite:* MDES 152.

MDES 250 Persian IV (4) Continuing Intermediate Persian (Farsi). Building conversational skills, listening and reading comprehension, grammar and vocabulary necessary for intermediate level spoken and written expression. *Prerequisite:* MDES 220.

MDES 252 Arabic IV (4, FaSp) Continuation of Arabic III. *Prerequisite:* MDES 222.

MDES 312 Iran in the Middle Ages (4, FaSp) Political and dynastic history of Iran from the Arab conquest in the 7th to the 18th century.

MDES 313 Modern Iran (4, FaSp) History and culture of modern Iran from the 19th century to present through historical and ethnographic approaches to Iran today, richly contextualizing events and people.

MDES 320 Advanced Persian I (4, FaSp) Advanced verbal and written expression in Persian, including deeper understanding of Persian culture. *Prerequisite:* MDES 250.

MDES 322 Advanced Arabic I (4, FaSp) Advanced expression in written and spoken Arabic, including reading of original texts, understanding different registers, and exposure to modern Arabic cultures. *Prerequisite:* MDES 252.

MDES 324 Classical Persian Literature in Translation (4, FaSp) Introduction to literary culture of pre-modern Persia, from about 800–1800 AD. Emphasis on poetry, the most extensive, prestigious, and influential medium of Persian literature.

MDES 325 Modern Persian Literature in Translation (4, FaSp) Modern Persian literature, covering the 19th, 20th, and 21st centuries, including the rise of diasporic literature in Persian. Includes poetry, but focused primarily on prose.

MDES 333 Colloquial Arabic: Regional Dialects (4, max 16, FaSp) Introduction to a regional Arabic dialect, focusing primarily on verbal skills. *Prerequisite:* MDES 152; *recommended preparation:* MDES 222 and/or MDES 252.

MDES 334 Media Arabic (4, FaSp) Introduction and development of language skills encountered in print and broadcast media Arabic. *Prerequisite:* MDES 222.

MDES 349g Ancient Empires (4, FaSpSm) (Enroll in CLAS 349g)

MDES 350 Advanced Persian II (4, FaSp) Continuation of Advanced Persian I. *Prerequisite:* MDES 320.

MDES 352 Advanced Arabic II (4, FaSp) Continuation of Advanced Arabic I. *Prerequisite:* MDES 322.

MDES 362 The International Relations of the Contemporary Middle East (4, Fa) (Enroll in IR 362)

MDES 363 Middle East Political Economy (4, Sp)
(Enroll in IR 363)

MDES 378 Ptolemaic Egypt (4) (Enroll in CLAS 378)

MDES 382 The Middle East, 500–1500 (4) (Enroll in HIST 382)

MDES 383 The Modern Middle East (4, Sp) (Enroll in HIST 383)

MDES 384 Popular Culture in the Middle East (4, FaSpSm) (Enroll in HIST 384)

MDES 394 Archaeology of Egypt and the Near East (4) (Enroll in REL 394)

MDES 402 Cultural Heritage, Religion, and Politics in the Middle East (4, Fa) (Enroll in REL 402)

MDES 448m Islam in France (4, FaSp) (Enroll in FREN 448m)

MDES 454 Classical Arabic (4, max 20, FaSp) Introduction to reading and interpretation of pre-modern, classical Arabic, including literature from the 6th to 19th centuries. *Prerequisite:* MDES 252.

MDES 461 Topics in Ancient Iranian Languages and Cultures (4, max 20) Studies and readings in one or more pre-modern Iranian languages and their cultural and historical contexts. Specific topics vary; may be repeated for credit.

MDES 463 Islam and Arab Nationalism (4) (Enroll in IR 463)

MDES 464 U.S. Policy Towards the Middle East: 1950 to the Present (4) (Enroll in IR 464)

MDES 480 Seminar in Middle East History (4, max 8) (Enroll in HIST 480)

MDES 490x Directed Research (1–8, max 12, FaSpSm) Individual research and readings. Not for graduate credit.

MDES 499 Special Topics (2–4, max 8, FaSpSm) Selected topics in Middle East studies.

Multidisciplinary Activities

Richard Fliegel, Ph.D., Associate Dean,
Undergraduate Programs, USC Dornsife College
(213) 740-2961
Email: fliegel@dornsife.usc.edu

Multidisciplinary Activities (MDA) courses are developed and taught by faculty from more than one program, department and/or school. These courses exist because of the college's interest in supporting interdisciplinary teaching and research. A student's transcript indicates enrollment in a multidisciplinary activities course.

Students who enroll in MDA courses share a common interest in the subject matter, but are not necessarily majors in those disciplines. These courses can be used as electives for certain degree requirements and, when indicated by the "g" suffix, for general education credit.

Collaborative Learning Projects (CLP) and Individual Programs of Study (IPOS)

See Learner Centered Curricula, page 392xx.

Courses of Instruction

MULTIDISCIPLINARY ACTIVITIES (MDA)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

MDA 100abcd Introduction to the Health Professions (1-1-1-1, FaSp) An introduction to the health professions, through lectures, discussions, clinical experiences, and visits to health care delivery sites; relationships with other clinicians and the community. Departmental approval required. Graded CR/NC.

MDA 101x Health Professions: Prospects and Preparation (1, Sp) Presentations by health professionals, introduced by faculty members from relevant academic units and followed by discussion with the speakers. Not available for degree credit. Graded CR/NC. *Recommended preparation:* BISC 120L or BISC 220L; CHEM 150aL.

MDA 105g Cultural Forms and Values I (4, FaSp) Norms and patterns of civilizations associated with the Greco-Roman and European traditions and the legacy of those traditions in North America.

MDA 110 Contemporary Issues and Cases in Health Care (2, FaSp) An introduction to the major areas of health care; the provider's relationship to choices in professional practice; ethics and historical context. (Duplicates credit in MDA 100abcd.) Graded CR/NC.

MDA 125Lg Scientific Principles (4, FaSp) Fundamental principles underlying a body of scientific knowledge and their evolution; the nature of scientific inquiry; how scientific knowledge is obtained and evaluated. A field experience or practical component required.

MDA 140 Practicum in Multimedia Authorship (2, FaSp) Introduction to the expressive potential of multimedia as a critical and creative tool, supplementing traditional forms of academic work. Graded CR/NC.

MDA 155g Cultural Forms and Values II (4, FaSp) Cultural norms and patterns of civilizations associated with Africa, Asia, Latin America, the Middle East, Native America, and elsewhere, alternative to those of the Greco-Roman and European traditions.

MDA 165g Social Inquiry (4, FaSp) Analyses of compelling local, national, and/or international issues; analytical tools examined systematically in a broad range of social phenomena. *Concurrent enrollment:* WRIT 140.

MDA 167g Marginal Groups in America (4, Fa) Sociological and historical analysis of marginal populations in American society, including racial and ethnic minorities, teenage mothers, drug abusers, criminals, and the mentally ill. *Concurrent enrollment:* WRIT 140.

MDA 170g La Frontera: The U.S.-Mexico Borderlands (4) Provides student with a multidisciplinary understanding of the U.S./Mexico border region. Topics to be covered include: space and place, internationalization, physical environment, gender relations and culture. *Concurrent enrollment:* WRIT 140.

MDA 175Lg Science and Technology (4, FaSp) The nature of science and technology, based on a focused study of a single area of research; scientific principles, their technological applications, and social significance.

MDA 200Lg The Cutting Edge: From Basic Science to the Marketplace (4, Sp) An introduction to the basic sciences of physics, chemistry, biology, and geology, examining the fundamental concepts, experimental approaches, and technological applications. Course will show the interrelationships among the fields and societal ramifications of these cutting edge technologies. (Duplicates credit in MDA 125L.)

MDA 205g Cities and Civilization (4, FaSp) Origins of cities, patterns of migration and resettlement, civic identities and the invention of public culture, from ancient Rome to contemporary Los Angeles.

MDA 250 Internship for Liberal Arts: Work and Career — Theory and Practice (1–2, max 4, FaSpSm) Students explore different understandings of work and career in American society while testing theories in an actual work setting.

MDA 310 Introduction to Peace and Conflict Studies (4, Sp) (Enroll in IR 310)

MDA 325 Case Studies in Modern Leadership (4, FaSp) Study of a single leader or small set of leaders, including the strengths and weaknesses that distinguish them and the cultural forces that nurture them.

MDA 330 The Armenian Heritage: History, Arts, and Culture (4, FaSp) A multidisciplinary exploration of the Armenian cultural heritage through the ages — folklore, traditions, religious practices, literature, architecture, painting, sculpture, music, theatre, film and dance.

MDA 333 Colloquium in Armenian Studies: Social and Cultural Issues (2, max 4, FaSpSm) Analysis of political, social, and cultural issues by the instructor and visiting lecturers with expertise in specific areas of the Armenian Republic and Diaspora community.

MDA 365 The Art and Adventure of Leadership (4, Sp) Areas of knowledge and kinds of competencies that are fundamental to the study and practice of leadership in a variety of settings.

MDA 399ab Team Research Communities (4-4, FaSp) Cross-disciplinary inquiry in the liberal arts. *a:* Research methodologies. *b:* Individual student and group projects contributing to the team's collaborative report.

MDA 450 Individual Program of Study (4-18, max 18, FaSpSm) An individual educational project approved by a faculty committee, combining directed research with internships, service learning, artistic or literary production, and/or other relevant educational activities. Open only to students with sophomore, junior or senior standing.

MDA 460 Collaborative Learning Project (4-8, max 8, FaSpSm) A project approved by a faculty committee, requiring students to collaborate on research or an original work in the literary, plastic, or performing arts. Open only to students with sophomore, junior or senior standing. Graded CR/NC.

MDA 475 The Future of California (4, FaSp) Challenges facing California; options for governmental and constitutional reform; opportunities for economic growth; demographic and cultural changes; education, environment, and other policy issues. *Recommended preparation:* junior or senior standing.

MDA 476 Policy Research on California (4, Sp) Research and proposed solutions concerning problems, policies, structural and constitutional challenges facing California. Open only to upper-division and master's students. *Prerequisite:* MDA 475.

MDA 490x Directed Research (1-8, max 12, FaSpSm) Individual research, reading, writing and project development.

MDA 494 Directed Creative Project (2-4, max 4, FaSpSm) Individual research, reading, writing and project development, guided by a faculty member with expertise in the area, who may be tenure-track or non-tenure-track. Open only to juniors and seniors.

MDA 495 Interdisciplinary Honors Seminar (2-4, max 4, Fa) The first part of an eight-unit sequence intended to award academic honors in a thematic area comparable to departmental honors in a single discipline. Open only to juniors and seniors.

MDA 496 Interdisciplinary Honors Thesis (4, Sp) The second part of an eight-unit sequence intended to award academic honors in a thematic area comparable to departmental honors in a single discipline. Open only to juniors and seniors. *Prerequisite:* MDA 495.

MDA 501 Introduction to Visual Studies: Methods and Debates (4) A critical introduction to the field of visual studies focusing on interdisciplinary approaches to images, objects, and visual technologies as well as key texts and interpretive debates. Students must be enrolled in a Ph.D. program at USC.

MDA 593 Practicum in Teaching the Liberal Arts (2, FaSp) Practical principles for the long-term development of effective teaching within college disciplines. Intended for teaching assistants in Dornsife College. Graded CR/NC.

MDA 599 Special Topics (2-4, max 8, Fa) The multidisciplinary, team-taught seminar addresses issues at the intersection of literary, visual, and material culture. The faculty team and specific topics studied will change each time the course is offered.

Multimedia Scholarship

Honors in Multimedia Scholarship
This program offers qualified undergraduate students an opportunity to approach their discipline(s) of study through the critical application of multimedia expression and scholarship. The student experience will be

characterized by smaller classes taught by leading faculty members and enriched by a program of lecture series, visiting scholars, symposia and conferences. For complete program requirements, see the USC School of Cinematic Arts section, page 224xx.

Neuroscience

Hedco Neurosciences Building 120
(213) 740-6091
FAX: (213) 740-2534
Email: yuhungw@usc.edu
usc.edu/programs/neuroscience
Director: Pat Levitt, Ph.D.

Participating Faculty: See Biological Sciences, Computer Science, Biomedical Engineering, Philosophy, Psychology, Engineering, Gerontology, Medicine and Pharmacy in this catalogue.

Bachelor of Arts in Neuroscience
Co-directors: Sarah Bottjer, Ph.D., and Irving Biederman, Ph.D.

Undergraduate Advisers: Eva Hinojoza, hinojoza@dornsife.usc.edu; Briana Weiland, bweiland@dornsife.usc.edu

Grade Requirements
A grade of C- or higher is required to count toward major requirements.

CORE REQUIREMENTS (32 UNITS)		UNITS
BISC 220L	General Biology: Cell Biology and Physiology, or	
BISC 221L	Advanced General Biology: Cell Biology and Physiology	4
BISC 421	Neurobiology	4
CHEM 103LX	General Chemistry for the Environment and Life, or	
CHEM 105aL	General Chemistry	4
MATH 125	Calculus I	4
NEUR 408	Systems Neuroscience: From Synapses to Perception	4
PSYC 100	Introduction to Psychology	4
PSYC 274L*	Statistics	4
PSYC 440	Introduction to Cognitive Neuroscience	4
*An equivalent course may be substituted with permission.		
8 core + 4 or 5 elective courses: 48 units		
Four or five upper-division elective courses (minimum 16 units) from the following list are required. At least one course in the upper-division electives must carry		

a lab ("L") designation or be NEUR 490x. No more than 4 units of NEUR 490x may be used to fulfill the upper-division elective requirement.

ELECTIVES (16 UNITS)		UNITS
ANTH 306	Primate Social Behavior	4
BISC 307L	General Physiology	4
BISC 313	Evolution and Population Genetics	4
BISC 320L	Molecular Biology	4
BISC 325	Genetics	4
BISC 330L	Biochemistry	4
BISC 403	Advanced Molecular Biology	4
BISC 406L	Biotechnology	4
BISC 410	Applications of Molecular Biology to Medicine	4
BISC 411	Advanced Cell Biology	4
BISC 422L	Neurobiology Laboratory	4
BISC 423	Epilepsy to Ecstasy: Biological Basis of Neurological Disorders	4
BISC 424	Brain Architecture	4
BISC 426	Principles of Neural Development	4

BISC 462	Seminar in Neurobiology	2, max 4	CORE REQUIREMENTS (56 UNITS)		UNITS	GERO 414	Neurobiology of Aging	4
BISC 480	Developmental Biology	4	BISC 220L	General Biology: Cell		GERO 415	Neuroaffective Disorders	
BME 402	Control and Communication			Biology and Physiology, or			of Aging	4
	in the Nervous System	3	BISC 221L	Advanced General Biology:		NEUR 490x	Directed Research	2 or 4
CSCI 460	Introduction to Artificial			Cell Biology and Physiology	4	PSYC 301L	Cognitive Processes	4
	Intelligence	3	BISC 421	Neurobiology	4	PSYC 304L	Sensation and Perception	4
GERO 414	Neurobiology of Aging	4	CHEM 105aL	General Chemistry, or		PSYC 305	Learning and Memory	4
GERO 415	Neuroaffective Disorders of		CHEM 115 aL	Advanced General Chemistry	4	PSYC 320	Principles of Psychobiology	4
	Aging	4	CHEM 105bL	General Chemistry, or		PSYC 326	Behavioral Neuroscience	4
MATH 265	Mathematical and		CHEM 115bL	Advanced General Chemistry	4	PSYC 339L	Origins of the Mind	4
	Computational Methods for		CHEM 322abL	Organic Chemistry	4-4	PSYC 404L	Psychophysiology of Emotion	4
	Neuroscience	4	MATH 125	Calculus I	4	PSYC 420	Animal Behavior	4
NEUR 490x	Directed Research	2 or 4	MATH 265	Mathematical and		PSYC 424	Neuropsychology	4
PSYC 301L	Cognitive Processes	4		Computational Methods		PSYC 425	Functional Imaging of	
PSYC 304L	Sensation and Perception	4		for Neuroscience	4		the Human Brain	4
PSYC 305	Learning and Memory	4	NEUR 408	Systems Neuroscience:		PSYC 426	Motivated Behaviors	4
PSYC 320	Principles of Psychobiology	4		From Synapses to Perception	4	PSYC 438	Behavioral Genetics	4
PSYC 326	Behavioral Neuroscience	4	PHYS 135aL	Physics for the Life Sciences, or				
PSYC 339L	Origins of the Mind	4	PHYS 151	Fundamentals of Physics I:		A graduate class from the following list can be		
PSYC 404L	Psychophysiology of Emotion	4		Mechanics and		substituted for an upper-division elective with		
PSYC 420	Animal Behavior	4		Thermodynamics	4	permission:		
PSYC 424	Neuropsychology	4	PHYS 135bL	Physics for the Life Sciences, or		BME 575L*	Computational	
PSYC 425	Functional Imaging of		PHYS 152	Fundamentals of Physics II:			Neuroengineering	3
	the Human Brain	4		Electricity and Magnetism	4	CSCI 564*	Brain Theory and Artificial	
PSYC 426	Motivated Behavior	4	PSYC 100	Introduction to Psychology	4		Intelligence	3
PSYC 438	Behavioral Genetics	4	PSYC 274L*	Statistics I	4	NEUR 524*	Advanced Overview of	
PSYC 450L	Neural Network Models		PSYC 440	Introduction to Cognitive			Neuroscience	4
	of Social and Cognitive			Neuroscience	4	NEUR 531*	Molecular and Cellular	
	Processes	4	*An equivalent course may be substituted with				Neurobiology	4
			permission.			NEUR 532*	Systems and Behavioral	
							Neurobiology	3
A graduate class from the following list can be			14 core + 5 or 6 elective courses: 76 units			PSYC 506*	Learning and Cognition	4
substituted for an upper-division elective with						PSYC 510*	Visual Cognition	4
permission:						PSYC 540*	Cognitive Neuroscience	4
BME 575L*	Computational		Five or six upper-division elective courses (minimum			PSYC 544*	Psychophysiology	4
	Neuroengineering	3	20 units) from the following list are required. At least			PSYC 545*	Neuropsychology	4
CSCI 564*	Brain Theory and Artificial		one course in the upper-division electives must carry			PSYC 547*	Functional Neuroanatomy	4
	Intelligence	3	a lab ("L") designation or be 490. No more than 4 units			PSYC 551*	Decision Neuroscience	4
NEUR 524*	Advanced Overview of		of NEUR 490x may be used to fulfill the upper-division			*With minimum GPA of 3.3 and permission of co-		
	Neuroscience	4	elective requirement.			directors and instructor		
NEUR 531*	Molecular and Cellular		ELECTIVES (20 UNITS)			UNITS		
	Neurobiology	4						
NEUR 532*	Systems and Behavioral		ANTH 306	Primate Social Behavior	4	Honors Program in Neuroscience		
	Neurobiology	3	BISC 307L	General Physiology	4	An honors program is available to outstanding students		
PSYC 506*	Learning and Cognition	4	BISC 313	Evolution and Population		who are pursuing a B.A. or B.S. degree in Neuroscience.		
PSYC 510*	Visual Cognition	4		Genetics	4	This program offers students exceptional opportunities		
PSYC 540*	Cognitive Neuroscience	4	BISC 320L	Molecular Biology	4	to participate in undergraduate research, culminating		
PSYC 544*	Psychophysiology	4	BISC 325	Genetics	4	in the experience of writing an honors thesis summa-		
PSYC 545*	Neuropsychology	4	BISC 330L	Biochemistry	4	rizing their completed research. Honors students must		
PSYC 547*	Functional Neuroanatomy	4	BISC 403	Advanced Molecular Biology	4	register for 4 units of Directed Research (NEUR 490x).		
PSYC 551*	Decision Neuroscience	4	BISC 406L	Biotechnology	4	Honors students are also required to take two semes-		
*With minimum GPA of 3.3 and permission of co-			BISC 410	Applications of Molecular		ters of the Honors Seminar (BISC 493x as one of their		
directors and instructor				Biology to Medicine	4	upper-division electives, 1 unit/semester), in which		
			BISC 411	Advanced Cell Biology	4	small groups of students discuss recent findings in		
			BISC 422L	Neurobiology Laboratory	4	neuroscience literature and their own research. After		
			BISC 423	Epilepsy to Ecstasy:		completing the honors seminar, honors students also		
				Biological Basis of		take one semester of Honors Thesis (BISC 494x, 2 units),		
				Neurological Disorders	4	in which students write their senior thesis. Students		
Undergraduate Advisers: Eva Hinojoza, hinojoza@			BISC 424	Brain Architecture	4	earning honors in neuroscience must have a minimum		
dornsife.usc.edu; Briana Weiland, bweiland@dornsife.			BISC 426	Principles of Neural		overall GPA of 3.5 at graduation. This program leads to		
usc.edu				Development	4	the designation on the transcript of Bachelor of Arts/		
			BISC 462	Seminar in Neurobiology	2, max 4	Science in Neuroscience with Honors.		
Grade Requirements			BISC 480	Developmental Biology	4	Bachelor of Science in Computational		
A grade of C- or higher is required to count toward			BME 402	Control and Communication		Neuroscience		
major requirements.				in the Nervous System	3	Co-coordinators: Sarah Bottjer, Ph.D., and Irving		
			CSCI 460	Introduction to Artificial		Biederman, Ph.D.		
				Intelligence	3			

Undergraduate Advisers: Eva Hinojoza, hinojoza@dornsife.usc.edu; Briana Weiland, bweiland@dornsife.usc.edu

The computational neuroscience major is designed for those students with an interest in applying mathematical and computational methodologies towards understanding the structure and functioning of the nervous system. The major will provide progressive training in interdisciplinary and inter-faculty aspects of neuroscience, and serve as a foundation for students interested in pursuing post-graduate education in graduate or professional schools or career opportunities in technically advanced occupations. Research is integral to this major and students are encouraged to engage in research with neuroscience faculty as early as possible in their undergraduate years.

Grade Requirements

A grade of C- or higher is required to count toward major requirements.

CORE REQUIREMENTS (48 UNITS)		UNITS
BISC 220L	General Biology: Cell Biology and Physiology, or	
BISC 221L	Advanced General Biology: Cell Biology and Physiology	4
BISC 421	Neurobiology	4
CHEM 103Lx	General Chemistry for the Environment and Life, or	
CHEM 105aL	General Chemistry	4
MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 265	Mathematical and Computational Methods for Neuroscience	4
NEUR 408	Systems Neuroscience: From Synapses to Perception	4
PHYS 135aL	Physics for the Life Sciences, or	
PHYS 151L	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 135bL	Physics for the Life Sciences, or	
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4
PSYC 100	Introduction to Psychology	4
PSYC 274	Statistics I	4
PSYC 440	Introduction to Cognitive Neuroscience	4

Biological Area

ELECTIVES		UNITS
Choose 4 units of the BISC or NEUR courses listed below:		
BISC 424	Brain Architecture	4
BISC 461	Seminar in Molecular and Computational Biology	2, max 4
BISC 462	Seminar in Neurobiology	2, max 4
BISC 481	Structural Bioinformatics: From Atoms to Cells	4
NEUR 490x	Directed Research	1-8, max 12

Computational Area

Students are to take one language, one application and one advanced course, for a total of three courses. The

language and application courses are listed as tracks according to the language of the courses. It is not obligatory that the language and application courses be from the same track, but the student should be aware that a different language will likely be assumed if the language and application courses are from different tracks. Only one language course and one application course will be counted toward the major.

Matlab

Language: EE 150L (or AME 150L) Engineering Computational Methods (3)

Application: BME 210 Biomedical Computer Simulation Methods (3)

C++

Language: CSCI 101L Fundamentals of Computer Programming (3)

Application: CSCI 102L Data Structures (3)

Logic Theory/C++/Java

Language: EE 101 Introduction to Digital Logic (3)

Application: CSCI 455x Introduction to Programming System Design (4)

Take one advanced course from the following:

BME 402	Control and Communication in the Nervous System	3
CSCI 300	Introduction to Intelligent Agents Using Science Fiction	3
CSCI 445	Introduction to Robotics	3
CSCI 460	Introduction to Artificial Intelligence	3
CSCI 464	Foundations of Exotic Computation	3
A graduate-level advanced course from those listed below may be substituted for the undergraduate advanced course with permission:		
BME 502	Advanced Studies of the Nervous System	4
BME 575L	Computational Neuroengineering	3
BME 670	Early Visual Processing	4
BME 671	Late Visual Processing	4
CSCI 561	Foundations of Artificial Intelligence	3
CSCI 564	Brain Theory and Artificial Intelligence	3
CSCI 566	Neural Network Self-Organization	3
CSCI 574	Computer Vision	3
CSCI 662	Advanced Natural Language Processing	3

Psychology Area

Choose one course listed below:

PSYC 301L	Cognitive Processes	4
PSYC 304L	Sensation and Perception	4
PSYC 326	Behavioral Neuroscience	4
PSYC 424	Neuropsychology	4
PSYC 425	Functional Imaging of the Human Brain	4
PSYC 450L	Neural Network Models of Social and Cognitive Processes	4

Math Electives

Choose one additional course from the courses listed below or from those listed above not already counting for the major:

MATH 225	Linear Algebra and Linear Differential Equations	4
MATH 245	Mathematics of Physics and Engineering I	4

12 core (48 units) + 6 electives (21–22 units); 69–70 units

Minor in Neuroscience

Co-coordinators: Sarah Bottjer, Ph.D., and Irving Biederman, Ph.D.

Undergraduate Advisers: Eva Hinojoza, hinojoza@dornsife.usc.edu; Briana Weiland, bweiland@dornsife.usc.edu

Grade Requirements

A grade of C- or higher is required to count toward minor requirements.

CORE REQUIREMENTS (20 UNITS)		UNITS
PSYC 274L*	Statistics I	4
BISC 421**	Neurobiology	4
NEUR 408**	Systems Neuroscience: From Synapses to Perception	4
PSYC 440***	Introduction to Cognitive Neuroscience	4
Electives	A 300- or 400-level course from the elective list for majors	4
*An equivalent course may be substituted with permission		
**Prerequisite: BISC 220 or BISC 221		
***Prerequisite: PSYC 100		

Recommended but not required: CHEM 103Lx (or CHEM 105La) plus MATH 125

Students who have not already taken the prerequisites (BISC 220/BISC 221 and PSYC 100) will need to take a total of 28 units to satisfy the requirements of a minor in neuroscience. Thus, the range of units will vary from 20 to 28 depending on a student's background.

Master of Science in Neuroscience

Coordinator: Pat Levitt, Ph.D.

The M.S. degree program in Neuroscience is a terminal degree for students admitted into the Neuroscience Ph.D. program who cannot complete the Ph.D. program for personal or medical reasons. Enrollment of graduate students as master's degree candidates is not encouraged and is reserved for special circumstances that must be approved by the Executive Committee of the Neuroscience Graduate Program. The master's curriculum includes all course work required of Ph.D. students for a minimum of 24 units and successful completion of both the written and oral portions of the qualifying examination. Students may opt for a thesis or non-thesis master's degree. The thesis master's degree requires presentation of a written thesis based on original research to a Neuroscience thesis committee

and submission of the thesis to the Graduate School for publication. The non-thesis master's degree requires a formal research paper that is approved by three members of the Neuroscience Graduate Program faculty. The qualifying examination will serve as the comprehensive master's examination for non-thesis master's degrees. Students must also satisfy residency and other requirements of the Graduate School.

Doctor of Philosophy in Neuroscience

Coordinator: Pat Levitt, Ph.D.

Application deadline: December 15

Breadth of interests and training are major features of the graduate program in neuroscience. Wide and varied skills in many research areas characterize the faculty of the program. Close contact between faculty and students is considered of major importance in this highly interdisciplinary field.

Training is given in several areas of specialization: behavioral and systems neuroscience, cellular and molecular neurobiology, cognitive neuroscience, computational neuroscience, neuroengineering and neuroscience of aging and development.

Applicants should normally have defined an interest in one or two specializations. A final choice of the specialization will be made during the first year.

Admission Requirements

A baccalaureate degree in a field relevant to the student's graduate goals is required.

Appropriate fields would include neuroscience, biology, chemistry, computer science, linguistics, psychology and many areas of engineering. Undergraduate study should provide evidence of proficiency in mathematics, including statistics. Students planning to enter the specialization in computational and mathematical neuroscience should have taken course work in calculus and, where possible, linear algebra and computer programming. Applicants who are accepted with minor deficiencies are expected to correct these during the first year.

Applications require forms from both the university and the program. These may be obtained from: Coordinator, Graduate Program in Neuroscience, University of Southern California, Los Angeles, CA 90089-2520.

Degree Requirements

These degrees are awarded under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue (page 97xx) for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School.

Advisory Committee

The student will be advised during the first year by the Graduate Affairs Committee. As soon as the student has selected a specialization, an Advisory Committee of appropriate faculty will be appointed. This committee will be chaired by the thesis adviser, when chosen. The purpose of the Advisory Committee is to help the student in the selection of courses and research; to monitor the student's progress; to insure preparation for the qualifying examination; and to administer that examination.

Course Requirements

A minimum of 60 units is required, consisting of formal courses, seminars and research credits. At least 24 of the 60 units are to be formal graduate course work (lecture or seminar courses). During the first year the student is expected to complete the core courses in neuroscience (NEUR 524), one key course, NEUR 538 Neuroscience Ethics and Professionalization, and two semesters of NEUR 539. Other courses in the area of specialization may also be taken in the first year and will be taken in subsequent years.

Core Course: NEUR 524 Advanced Overview of Neuroscience (4 units), will be taken by all students in the fall of their first year to provide an integrated multilevel view of neuroscience. To take the core course, students should have mastered the material currently taught in BISC 421. (Students will be expected to review a detailed syllabus and reading list for BISC 421 to identify their level of knowledge prior to their arrival at USC and will receive advice at Orientation on whether to take BISC 421 or read recommended material to remedy their deficiencies.)

Key Courses: All students will be required to complement their thesis-directed studies with a "breadth with depth" requirement by taking three key courses, one each from three of the four tracks listed below. Each key course will be for 3 or 4 units. (At least one of these courses will serve to advance thesis-related study as well.)

CELLULAR, MOLECULAR AND DEVELOPMENTAL NEUROSCIENCE TRACK		UNITS
NEUR 531	Molecular and Cellular Neurobiology	4
BISC 426	Principles of Neural Development	4
COGNITIVE NEUROSCIENCE TRACK		UNITS
PSYC 540	Cognitive Neuroscience	4
COMPUTATIONAL NEUROSCIENCE AND NEUROENGINEERING TRACK		UNITS
BME 575L	Computational Neuroengineering	3
NEUR 535	Brain Theory and Artificial Intelligence	3
SYSTEMS AND BEHAVIORAL NEUROSCIENCE TRACK		UNITS
NEUR 532	Systems and Behavioral Neurobiology	3

All students are required to take NEUR 538 Neuroscience Ethics and Professionalization (1 unit).

It is required that all neuroscience Ph.D. students demonstrate competence in statistics in fulfillment of their Ph.D. requirements.

Qualifying Examination

The qualifying examination concentrates on the student's ability to demonstrate a grasp of the major area of interest chosen and its relation to other areas of training offered in the program. The examination is

partly written and partly oral and is designed to test the student's ability to meet the demands of the profession.

Dissertation

An acceptable dissertation based on completion of an original investigation is required. The candidate must defend an approved draft of the dissertation in an oral examination.

Courses of Instruction

NEUROSCIENCE (NEUR)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

NEUR 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

NEUR 408 Systems Neuroscience: From Synapses to Perception (4, Sp) Sensory systems to illustrate basic concepts regarding the functional organization of the brain, from the microscopic arrangement of neural circuits to global processes such as perception. *Prerequisite:* BISC 421.

NEUR 426 Principles of Neural Development (4, Sp) (Enroll in BISC 426)

NEUR 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

NEUR 494x Honors Thesis (2, FaSp) Not available for graduate credit. Programmatic approval.

NEUR 524 Advanced Overview of Neuroscience (4, Fa) Study of the nervous system at multiple levels through the analysis of four themes: motor control; emotion, motivation, and decision-making; memory and learning; and vision. Open only to graduate students. *Prerequisite:* BISC 421.

NEUR 531 Molecular and Cellular Neurobiology (4, Fa) Introduces fundamental principles of advanced molecular and cellular neurobiology including proteins and nucleic acids, cell biology of neurons and glia, synaptic transmission and neuronal signaling. Open only to graduate students.

NEUR 532 Systems and Behavioral Neurobiology (3, Fa) Systems and behavioral neurobiology: hierarchical mechanisms controlling behavior, experimental techniques; perceptual (visual, auditory, somatosensory) systems; sensorimotor systems; motivated behavior; learning, memory and adaptation. Open only to graduate students. *Prerequisite:* NEUR 524.

NEUR 533 Cognitive Neuroscience (4, Sp) (Enroll in PSYC 540)

NEUR 534L Computational Neuroengineering (3) (Enroll in BME 575L)

NEUR 535 Brain Theory and Artificial Intelligence (3) (Enroll in CSCI 564)

NEUR 538 Neuroscience Ethics and Professionalization (1, Fa) Exposes students to ethical issues in scientific research, especially for neuroscience; scientific integrity and professional roles for the academician and neuroscientist. Open only to graduate students.

NEUR 539 Seminar in Neurobiology (1, max 4, FaSp) (Duplicates credit in former BISC 539.)

NEUR 541 Neurobiology of Disease (3, Sp) Introduction to the fundamental aspects of common diseases affecting the brain including clinical features, animal models, genetics, neuropathology, synaptic function, and therapeutic targets. *Prerequisite:* NEUR 524.

NEUR 542 Hearing and Communication Neuroscience (4, Sp) (Enroll in BISC 521)

NEUR 599 Special Topics (2-4, max 8) Special topics providing background for instruction and research in neuroscience through lectures, discussions, assigned readings, and student presentations.

NEUR 790 Research (1-12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC. Open only to neuroscience graduate students.

NEUR 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC. Open only to neuroscience graduate students.

Ocean Sciences

Zumberge Hall of Science 117

(213) 740-6106

FAX: (213) 740-8801

Email: waite@usc.edu
oceansciences.usc.edu

Director: Douglas E. Hammond, Ph.D.

Participating Faculty: See Biological Sciences, Earth Sciences and Engineering in this catalogue.

Applications for the Ocean Sciences program should be routed through the affiliated departments and a separate letter sent to the Ocean Sciences Director, Douglas E. Hammond, USC Earth Sciences, Los Angeles, CA 90089-0740.

Degree Programs

The Graduate Program in Ocean Sciences (GPOS) provides interdisciplinary education and training to prepare professional ocean scientists for careers in academia, industry, and state and federal government. Students develop the ability to identify and solve significant problems in ocean sciences by using their training in several disciplines. They develop the ability to formulate and test hypotheses and integrate information and concepts about how the earth-ocean system is structured and how it functions. Training also is provided to develop skills in oral and written communication of technical and scientific information. Both M.S. and Ph.D. degree programs are offered; both require preparation of a thesis (M.S.) or dissertation (Ph.D.).

Admission Requirements

All rules and regulations described in the Graduate School section (page 97xx) of this catalogue and Graduate Admission (page 80xx) apply to students in the GPOS.

Official acceptance by the GPOS Admissions Committee is based on the recommendation of faculty from an affiliated department. Acceptance depends upon the applicant's letters of recommendation, research experience, intended area of research, personal interview (whenever possible), and the availability of a faculty member willing to advise and sponsor the applicant.

A B.S. or B.A. degree in an appropriate field of natural science, engineering or mathematics is required for admission.

It is expected that applicants to the GPOS will have attained a scholarship average of at least "B" (3.0 GPA

on a 4.0 scale) preferably in the natural sciences or mathematics. Applicants must have taken the GRE aptitude test (verbal and quantitative). Successful applicants typically score in excess of 600 on both verbal and quantitative parts of the exam.

Applicants should contact the GPOS office by email or phone for an admission package. The GPOS admits students for both the fall and spring semesters; however, applicants for assistantships are encouraged to apply for the fall semester.

Graduate Degrees

Degree Requirements

Advanced degrees are under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section (page 97xx) of this catalogue for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School.

Master of Science in Ocean Sciences

The program does not accept applicants for a Master of Science degree in ocean sciences. The M.S. degree is intended only as a transitional degree in the process of completing requirements for the Ph.D. in ocean sciences.

Research Tool Requirements

None required.

Course Requirements

The M.S. degree in Ocean Sciences requires at least 24 units of course work, including two core courses (OS 512 and 582). Four thesis units (OS 594) are also required. At least 16 units of course work must be at the 500-level or higher; no more than six units can be directed research (OS 590); a maximum of four units with superior grades in approved course work may be transferred from an accredited graduate school. Students are required to maintain an overall GPA of 3.0 in all graduate work.

Thesis

Students should arrange for the appointment of a thesis adviser and committee after the first semester, or at the latest, after the first year of graduate work. The thesis committee should consist of the adviser plus two other faculty members, all of whom are generally selected

from GPOS faculty. Once the committee is arranged, the student may make formal application to the Graduate School for the M.S. degree.

Doctor of Philosophy in Ocean Sciences

Research Tool Requirements

To be determined by qualifying exam committee.

Course Requirements

The Ph.D. degree in Ocean Sciences requires at least 27 units of formal course work (including seminars) of the 60 total units needed. Two core courses are required (OS 512, OS 582). No more than 15 units of 400-level course work may be applied. A maximum of 30 units may be transferred from an accredited graduate school.

Students are required to maintain an overall GPA of 3.0 in all graduate work.

Students may request permission to take the Ph.D. qualifying examination on completion of 24 units of course work, including two core courses in Ocean Sciences.

Screening Procedure

Students in the Ph.D. program must pass the screening procedure before their 25th unit of graduate credit. Screening consists of a review of the student's progress and is usually done by the GPOS Review Committee following a written recommendation by the student's adviser(s). Screening occurs at the end of each semester.

Qualifying Exam Committee

The doctoral qualifying exam committee is formed after the student has passed the screening procedure. The committee is appointed by the department with the advice of the student's research adviser. The five-member committee consists of the adviser, a minimum of three other members from the GPOS faculty, and one additional tenure-track faculty member. The committee must include faculty members from more than one academic department. A tenure-track faculty member must serve as research adviser or co-adviser. The committee consults with the student, recommends an appropriate program of study and administers written and oral qualifying examinations.

Qualifying Examination

The student may request permission to take the Ph.D. qualifying examination upon completion of 24 units of course work, including two core courses in ocean sciences. The qualifying examination consists of a written and an oral part, both parts prepared, conducted and evaluated by the student's examination committee. The written examination will consist of a number of questions given on two consecutive days. Questions will be comprehensive in scope with respect to the student's chosen area of specialization and will be designed to test the student's conceptual, analytical and integrative ability and preparation.

The written part of the qualifying examination must be taken before the oral examination. The oral examination will be in the area of the student's intended research and will be based on a research project selected and developed by the student into a written proposition. The oral examination will be conducted and evaluated by the student's examination committee. The oral examination must be taken within one month of the written examination.

Defense of the Dissertation

After the student has passed the qualifying examination, the qualifying exam committee recommends to the Graduate School that the student be admitted to candidacy for the Ph.D. degree. Following admission to candidacy the student must register for OS 794 Dissertation every semester, except summers, until the degree is awarded.

Once the qualifying examination is passed, the student is required, as soon as possible, to appoint a dissertation committee, using an appointment of committee form which can be found on the Graduate School Website (usc.edu/schools/GraduateSchool). All or some of the qualifying exam committee may be nominated. Until a dissertation committee is appointed, the qualifying exam committee will have responsibility for the student's program of study. The student must

undertake an original investigation of a problem in ocean sciences. The topic must be approved by the student's dissertation committee and will usually be based on the written proposition presented in the qualifying examination.

A dissertation based on the student's research must be approved by the student's dissertation committee. The student must then defend the dissertation. The process for submission of the dissertation to the Graduate School can be found on the Graduate School Website under "Current Students — Thesis and Dissertations." This process should be started approximately one month before the defense, and the student must allow adequate time after the defense for final copy preparation.

The dissertation must conform to the general regulations described in *Regulations for Format and Presentation of Theses and Dissertations*, also available from the Graduate School Website. Additional regulations and information on the organization and preparation of the dissertation are provided in *Directions for Preparation of Dissertations and Research Reports as Required by the Graduate Program in Ocean Sciences/University of Southern California*, available in the GPOS office.

Interdisciplinary Programs

The Graduate Program in Ocean Sciences is designed to be interdisciplinary, reflecting the nature of the field that combines principles of physical, chemical, geological and biological oceanography to solve relevant problems in the ocean environment.

Courses of Instruction

OCEAN SCIENCES (OS)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

OS 512 Introduction to Chemical and Physical Oceanography (3, 2 years, Fa) Principles of physical, chemical, and geological oceanography including discussions of air-sea interaction, biogeochemical cycling and the role of the ocean in modulating climate and atmospheric composition; discussion section will cover formulation of basic calculations that illustrate these principles. *Prerequisite:* CHEM 105bL, MATH 126.

OS 582 Advanced Biological Oceanography (4, Fa) (Enroll in BISC 582)

OS 590 Directed Research (1–12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

OS 594abz Master's Thesis (2–2-0, FaSpSm) Credit on acceptance of thesis. Graded IP/CR/NC.

OS 599 Special Topics (2–4, max 8, Irregular) Course contents each semester will be selected to reflect current trends and new developments in the field of Ocean Sciences.

OS 790 Research (1–12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

OS 794abcdz Doctoral Dissertation (2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC.

Philosophy

Mudd Hall of Philosophy
(213) 740-4084

FAX: (213) 740-5174

Email: philos@dornsife.usc.edu
dornsife.usc.edu/phil

Director: Scott Soames, Ph.D.*

Faculty

Distinguished Professor and Linda MacDonald Hilf Chair in Philosophy: James Higginbotham, Ph.D.*

Distinguished Professor: Scott Soames, Ph.D.*

Provost Professor of Philosophy and Law: Gary Watson, Ph.D.

Professor of Philosophy and Maurice Jones, Jr. — Class of 1925 Professor of Law: Andrei Marmor, LL.B., Ph.D.

Professors: John Hawthorne, Ph.D.; Robin Jeshion, Ph.D.; Gregory Keating, Ph.D. (Law); Sharon Lloyd,

Ph.D.*; Edwin McCann, Ph.D.*; Kevin W. Robb, Ph.D.*; Mark Schroeder, Ph.D.*; Gabriel Uzquiano Cruz, Ph.D.; James Van Cleve, Ph.D.; Ralph Wedgewood, Ph.D.

Associate Professors: Zlatan Damjanovic, Ph.D.; John H. Dreher, Ph.D.; Stephen Finlay, Ph.D.; Janet Levin, Ph.D.; Jacob Ross, Ph.D.; Kadri Vihvelin, Ph.D., LL.B.

Assistant Professors: Andrew Bacon, Ph.D.; Kenneth Easwaran, Ph.D.; Shieva Kleinschmidt, Ph.D.

Emeritus University Professor and Emeritus Dean of the USC Dornsife College of Letters, Arts and Sciences: S. Marshall Cohen, M.A.*

Emeriti Professors: Frank Lewis, Ph.D.; Dallas Willard, Ph.D.*; George Wilson, Ph.D.

*Recipient of university-wide or college teaching award.

Undergraduate Programs

The School of Philosophy offers courses in most areas of philosophy, including philosophy of mind, philosophy of language, epistemology, metaphysics, logic, philosophy of science, political philosophy, ethics, aesthetics, the history of philosophy, phenomenology and existentialism. The major in philosophy is designed to acquaint students with the fundamental problems of Western thought and introduce them to the concepts and techniques necessary for independent philosophical thinking; it is equally intended to provide a broadening perspective for the various areas of specialization in the natural and social sciences and in literature and the arts. The school also offers minors in: ethics and moral philosophy; philosophy; philosophy for business, law, and the professions; and theories of art.

Graduate Programs

The School of Philosophy offers a Master of Arts in Philosophy, a Master of Arts in Philosophy and Law, a joint degree with the USC Gould School of Law and a Doctor of Philosophy in Philosophy.

Undergraduate Degrees

Major Requirements for the Bachelor of Arts in Philosophy

The School of Philosophy offers three major options: the major in philosophy, the major in philosophy with honors, and the major in philosophy, politics and law.

The major in philosophy requires eight courses in philosophy; six of these must be at the upper-division level. One of the eight courses must be a gateway course — PHIL 300, PHIL 315, PHIL 320, PHIL 340, or PHIL 360 — which must be taken before taking any 400-level courses. Students are strongly encouraged to take a course in logic: PHIL 250ab, PHIL 350, PHIL 351 or PHIL 352.

Distribution requirement: Students must take at least one course from each of the three categories listed below:

History of Philosophy: PHIL 315, PHIL 320, PHIL 345, PHIL 410, PHIL 411, PHIL 415, PHIL 421, PHIL 422, PHIL 423, PHIL 424, PHIL 427, PHIL 434

Ethics, Law and Value Theory: PHIL 330, PHIL 335, PHIL 337, PHIL 340, PHIL 345, PHIL 430, PHIL 437, PHIL 440, PHIL 442

Systematic Philosophy: PHIL 350, PHIL 351, PHIL 352, PHIL 360, PHIL 385, PHIL 427, PHIL 428, PHIL 460, PHIL 462, PHIL 463, PHIL 465, PHIL 470, PHIL 480, PHIL 485, PHIL 486

During the senior year, students enrolled in one of the three majors' programs in philosophy can take a capstone seminar. Students who are enrolled in one of the minors in philosophy may enroll in a capstone seminar only with the permission of the instructor. Enrollment in these seminars will not exceed 15 students. Students may enroll in a capstone seminar only if they have satisfied the following requirements: taken a course in logic (PHIL 250ab, PHIL 350, PHIL 351, or PHIL 352), taken at least one 400-level course in philosophy and have a GPA in philosophy of 3.0 or above.

Double Major

Double majors are encouraged but a student must work in close consultation with the undergraduate adviser.

Bachelor of Arts with a Combined Major in Linguistics and Philosophy

See Linguistics, page 395xx.

Bachelor of Arts in Philosophy, Politics and Law

This interdisciplinary major combines, in a systematic and structured way, basic education in philosophy, political theory and elements of law. An interdisciplinary approach to the combination of these three disciplines may be of particular interest to students contemplating post-graduate work in law; those interested in a career in public service or politics; and those attracted by the rigor of philosophy and its attention to foundational issues, who are also interested in politics and law. Students are exposed to a wider range of conceptual and methodological approaches than they would in any single discipline, while learning enough philosophy and political science to leave a choice of options

for graduate schools. The major requires nine classes, one of which must be a gateway course — PHIL 300, PHIL 315, PHIL 320, PHIL 340 or PHIL 360 — distributed as follows.

REQUIREMENTS		UNITS
One lower-division class from the following:		
PHIL 135	Legal Controversies and Ethical Principles	4
PHIL 140	Contemporary Moral and Social Issues	4
PHIL 141	The Professions and the Public Interest in American Life	4
PHIL 262	Mind and Self: Modern Conceptions	4
POSC 130	Law, Politics and Public Policy	4

Students who satisfy one of their general education requirements by taking a core, thematic options course of comparable scope and content, can, at the discretion of the director of the School of Philosophy and the philosophy undergraduate adviser for this major, substitute that course for one of the above.

One course in logic:		
PHIL 350	Symbolic Logic	4
PHIL 351	Reasoning and Logic	4
PHIL 352	Logic and Language	4

One course in philosophy of law:		
PHIL 430	Philosophy of Law	4
PHIL 431	Law, Society, and Politics	4

Two courses from Categories A, B and C below. The two courses must belong to different categories, and one of these courses must be a gateway course: PHIL 300, PHIL 315, PHIL 320, PHIL 340 or PHIL 360. *Students are required to take a gateway course before enrolling in any 400-level course in philosophy.*

A. Moral and political philosophy

PHIL 335	Theoretical Models of Leadership	4
PHIL 337	History of Modern Political Philosophy	4
PHIL 340	Ethics	4
PHIL 437	Social and Political Philosophy	4
PHIL 440	Contemporary Ethical Theory	4
PHIL 442	History of Ethics to 1900	4
PHIL 443	Value Theory	4

B. History of philosophy:

PHIL 300	Introduction to the Philosophical Classics	4
PHIL 315	History of Western Philosophy: Ancient Period	4
PHIL 317	History of Western Philosophy: Medieval Period	4
PHIL 320	History of Western Philosophy: Modern Period	4
PHIL 423	The Critical Philosophy of Kant	4
PHIL 426	20th Century European Philosophy	4

PHIL 427	20th Century Anglo-American Philosophy	4
PHIL 428	Anglo-American Philosophy since 1950	4

C. Systematic areas of philosophy:

PHIL 360	Epistemology and Metaphysics	4
PHIL 462	Philosophy of Mind	4
PHIL 463	Theories of Action	4
PHIL 465	Philosophy of Language	4
PHIL 470	Theory of Knowledge	4

One course in constitutional politics:

POSC 335	Political Parties, Campaigns, and Elections	4
POSC 340	Constitutional Law	4
POSC 426	The United States Supreme Court	4
POSC 444	Civil and Political Rights and Liberties	4

One course in comparative or international politics and law:

ANTH 345	Politics, Social, Organization and Law	4
POSC 345	International Law	4
POSC 440	Comparative Law and the Judicial Process	4
POSC 448a	The Politics of Peace: Human Rights	4

One course in politics, law, and public policy:

POSC 347	Environmental Law	4
POSC 395	Directed Governmental and Political Leadership Internship	4
POSC 443	Law in Film	4
POSC 452	Critical Issues in Law and Public Policy	4
SWMS 349	Women and the Law	4

One course in law:

LAW 300 Concepts in American Law 4
Note: Students in the major may enroll in a capstone seminar in philosophy if they have satisfied the general requirements: a GPA of 3.0 in major course work; a course in logic, and at least one 400-level course in philosophy, taken prior to the capstone seminar.

Philosophy Honors Program

Students who are considering the possibility of continuing their education at a graduate level in philosophy or similar disciplines, or students who wish to undertake a more intensive course of studies in philosophy, which includes original independent research, are strongly encouraged to take the major with honors.

The major with honors requires completion of the requirements for the Bachelor of Arts, with the following additional requirements:

(a) Students must take a capstone seminar, having completed the prerequisites for taking it.

(b) In addition to the required courses for the major, students must take PHIL 494 Senior Thesis during the fall term of their senior year. The senior thesis will be graded by the student's adviser and another member of the School of Philosophy, following an oral defense.

The senior thesis must be completed with a grade of B or higher.

(c) Students must have a GPA of 3.5 or higher in their philosophy courses.

Students who intend to complete the major with honors are encouraged to enroll in the program during their sophomore year (but no later than the end of the first term of their junior year), and should consult about their studies with the faculty adviser for the honors program on a continuous basis.

Minor in Ethics and Moral Philosophy

The aim of the minor is to provide students headed for medicine, biology, psychology and other health care professions with a broad humanistic perspective not found in professional education and the critical tools to deal with the ethical issues that may arise in their professional lives.

Students are required to take five courses in philosophy, at least four of which must be upper-division. Students must take at least one lower-division or 300-level course before taking any 400-level courses.

Students must take at least two courses from category one below, and at least one course from category two:

1. *Ethics, History of Ethics and Value Theory*: PHIL 140, PHIL 141, PHIL 340, PHIL 361, PHIL 430, PHIL 431, PHIL 440, PHIL 442

2. *Systematic Philosophy*: PHIL 262, PHIL 360, PHIL 385, PHIL 427, PHIL 428, PHIL 460, PHIL 462, PHIL 465, PHIL 470

Minor in Philosophy

The minor in philosophy requires the completion of five philosophy courses, at least four of which are upper-division courses. All minors must take a gateway course — PHIL 315, PHIL 320, PHIL 340, or PHIL 360 — before enrolling in any 400-level course.

Distribution requirement: Students must take at least one course from each of the three categories listed below:

History of Philosophy: PHIL 315, PHIL 320, PHIL 345, PHIL 410, PHIL 411, PHIL 415, PHIL 421, PHIL 422, PHIL 423, PHIL 424, PHIL 427

Ethics, Law and Value Theory: PHIL 330, PHIL 335, PHIL 337, PHIL 340, PHIL 345, PHIL 430, PHIL 437, PHIL 440, PHIL 442

Systematic Topics: PHIL 350, PHIL 351, PHIL 352, PHIL 360, PHIL 385, PHIL 427, PHIL 428, PHIL 460, PHIL 462, PHIL 463, PHIL 465, PHIL 470, PHIL 480, PHIL 485, PHIL 486

Minor in Theories of Art

Theorizing about the arts takes place in the discipline of philosophy (aesthetics) as well as in all the individual disciplines concerned with the individual arts. Some of the issues involved (is perspective a matter of convention?; how does acting differ in cinema and in theatre?) are specific to a particular discipline or disciplines, but their discussion typically involves very general issues (in the cases mentioned, issues about the nature of convention or of artistic media) and many of the issues

manifest themselves in all these disciplines (the relation of intention to interpretation; the epistemological and moral status of the arts; the nature of evaluative judgments). The understanding of these issues can be greatly enhanced by studying them as they arise in different arts and in different theoretical traditions. The minor should be of interest to students with an interest in philosophy, or students in any of the arts who are interested in their theoretical dimensions.

There are no entrance requirements for the minor, which requires six courses (23 or 24 units, depending on course selection).

All students must take PHIL 242 Theories of Art (4 units) and select five courses from the following:

AHIS 250	Modernity and Difference: Critical Approaches to Modern Art	4
ARCH 314	Theory and Criticism: Recent Trends and Developments	3
COLT 391	Literary Criticism from Plato to Postmodernism	4
COLT 454	Aesthetic Philosophy and Theory	4
ENGL 479	History of Literary Criticism	4
ENGL 480	Modern Literary Criticism: Theory and Practice	4
PHIL 445	Philosophy of the Arts	4
PHIL 446	Aesthetics and the Film	4
THTR 404	Acting Theory	4

Minor in Critical Approaches to Leadership

See Interdisciplinary Studies, page 375xx.

Minor in Philosophy for Business, Law, and the Professions

The aim of the minor is to provide students headed for business, law or the professions a strong set of critical, analytic and expository skills, while providing them with a broad humanistic perspective not found in professional education.

Students are required to take five courses, at least four of which must be upper-division. They must take one course from each of the following categories (1–4), and one additional course from either category 2 or 3. Students must take at least one lower-division or 300-level course before taking any 400-level courses.

1. *Logic*: PHIL 350, PHIL 351, PHIL 352
2. *Law, Leadership, and the Professions*: PHIL 141, PHIL 330, PHIL 335, PHIL 430, PHIL 431
3. *Ethics, History of Ethics, and Value*: PHIL 140, PHIL 340, PHIL 345, PHIL 361, PHIL 440, PHIL 442
4. *Systematic Philosophy*: PHIL 262, PHIL 360, PHIL 385, PHIL 427, PHIL 428, PHIL 460, PHIL 462, PHIL 465, PHIL 470

Graduate Degrees

The objective of the graduate program in philosophy is to equip suitably prepared and talented students to function effectively as teachers, thinkers and writers on philosophical topics in the Western tradition. The program provides for a wide range of studies within philosophy, but emphasizes the history of philosophy, both classical and modern, along with the traditional

core disciplines: ethics, epistemology, metaphysics and logic.

Because philosophy is as much a special manner of intellectual activity as it is a special subject matter, the graduate student is expected not only to master major works in the historical and contemporary literature of philosophical thought, but also to develop the ability to engage in the ongoing process of philosophical research and dialogue.

Admission Requirements

An applicant for admission normally has an undergraduate major in philosophy, but programs may be arranged for promising students who do not. At least three letters of recommendation from the student's undergraduate teachers should be sent to the chair of graduate admissions of the School of Philosophy. All applicants are required to take the verbal and quantitative General Tests of the Graduate Record Examinations.

Degree Requirements

These degrees are awarded under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue (page 97xx) for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School.

Master of Arts in Philosophy

The department does not accept applicants for a Master of Arts degree in philosophy. The M.A. degree is intended only as a transitional degree in the process of completing requirements for the Ph.D. in philosophy.

A student may obtain an M.A. in philosophy by fulfilling the following requirements: a minimum of 36 units in the USC philosophy school, at least 24 of which must be at the 500 level. Requirements include: PHIL 500, PHIL 503 and a 500-level course in each of the following three areas: metaphysics and epistemology, ethics and other value theory, and history of philosophy. Of the remaining four required (4-unit) courses, only four units of PHIL 590 are applicable to the degree. A publishable research paper is also required.

Progressive Degree Program in Philosophy and Law

The progressive degree program permits exceptional undergraduate students with a major or minor in philosophy to receive both an undergraduate degree and the Master of Arts in Philosophy and Law within five years. A minimum GPA of 3.5, two letters of recommendation and outstanding performance in philosophy courses are required for admission to this program. For other requirements of the progressive degree program, see page 87xx.

Master of Arts in Philosophy and Law

A total of 36 units are required for the degree, including at least 24 units in philosophy. Twelve of these must come from completing the specialization and breadth requirements. The former requires students to take a 4-unit, 500-level course in philosophy on a topic spanning philosophy and law. The latter requires students to take PHIL 500 or PHIL 503, plus another 4-unit, 500-level course in philosophy on a topic that does not span philosophy and law, including but not limited

to topics in metaphysics, epistemology, philosophy of language, philosophy of science, ethics, aesthetics and history of philosophy. Students must also demonstrate a basic proficiency in symbolic logic, typically by passing, at a sufficiently high level, one of a specified range of 4-unit courses in logic offered by the School of Philosophy. The law requirement for this degree consists of two courses in the USC Gould School of Law. The first must be either LAW 503 Contracts or LAW 509 Torts I. The second must be either LAW 504 Criminal Law or LAW 508 Constitutional Law. Students who elect to take LAW 504 would normally also take 1 unit of PHIL 590 as an accompaniment. Degree candidates must also write a master's thesis on some subject in legal philosophy. At least one of the thesis advisers must have an appointment in the School of Philosophy.

Juris Doctor/Master of Arts, Philosophy

Students must complete 24 units in the USC School of Philosophy and 69 units in the USC Gould School of Law.

First Year: Required law school curriculum.

Second and Third Years: The School of Philosophy prefers that students take at least one philosophy course each semester. During the four semesters, students must take at least 16 units at the 500-level, including PHIL 450 Intermediate Symbolic Logic or PHIL 510 Philosophical Logic and PHIL 500, and PHIL 503, one 400- or 500-level course in ethics or social/political philosophy or aesthetics or philosophy of law; one 400- or 500-level course in metaphysics or epistemology or philosophy of language or philosophy of science or philosophy of mind; one 400- or 500-level course in the history of ancient or early modern philosophy; passage of the second year review that shall include a research paper based on a completed seminar paper and completion of a publishable research paper. Students must also complete 36 additional law units.

Doctor of Philosophy in Philosophy

Application deadline: January 1

Course Requirements

The minimum number of course credits required for the Ph.D. is 60 units. No more than 8 of these units may be from 590 courses and no more than 8 of these units may be from 400-level courses in the School of Philosophy. PHIL 450 does not count toward this maximum of 8 units of 400-level courses in the School of Philosophy. No more than eight of these units may be earned in 794 Doctoral Dissertation. Each student must pass PHIL 450 or PHIL 510 with a grade of B or better and must pass both PHIL 500 and PHIL 503 with a grade of B+ or better. PHIL 450 or PHIL 510 and both PHIL 500 and PHIL 503 must be satisfactorily completed by the end of the second year.

The student may take up to two courses in a field of study related to philosophy. The Ph.D. dissertation may be written in any area of philosophy for which adequate supervision is available from within the university. Ph.D. students are also required to show evidence of practical or editorial training, or their equivalent.

Foreign Language/Research Tool Requirement

A foreign language examination, specified by the school, in French, German, Latin or classical Greek is required. The faculty may approve a replacement of the language requirement by a research tool requirement, consisting of an approved course or examination in a subject essential to the student's research program. The course or examination must be passed before the qualifying examination is attempted.

There are three levels of evaluation in the Ph.D. program prior to the dissertation:

Distribution Requirement

There is a distribution requirement of six courses at the 500 level in the School of Philosophy, one each from the following six areas: (1) epistemology (broadly construed, including philosophy of science), (2) metaphysics (broadly construed, including philosophy of mind and language), (3) ethics, (4) other value theory, (5) history of ancient philosophy, and (6) history of modern philosophy. PHIL 500, PHIL 503 and PHIL 590 courses cannot count toward this requirement. The courses in the systematic area will be taught in the tradition of Anglo-American analytic philosophy. For courses straddling two areas (for example, history of ancient philosophy and metaphysics; history of modern philosophy and ethics), instructors will indicate on the syllabus which requirement the course will satisfy. Courses dealing with subject matter within more than one of the six areas listed may be used to satisfy any of the areas encompassed by the course although no single course may be used to satisfy two requirements at once. All distribution requirements must be completed by the end of the fifth semester.

Screening Procedure

Students in the Ph.D. program must pass a screening procedure before undertaking their 25th unit (seventh course) of graduate credit. This will be based on a review of the student's work to date, and will take into account not only information acquired but also those intellectual qualities and capacities that are essential for good work in philosophy: the capacity to think and write on philosophical issues with clarity, consistency and thoroughness; the ability to understand in detail what is involved in the meaning and justification of philosophical claims or positions; the ability to recognize and to draw out fine conceptual distinctions and to perceive their logical relationships; and strong intellectual curiosity and independence of thought.

Student Reviews

Graduate student progress is reviewed on a regular basis each term. In addition, apart from the screening procedure, there are more formal reviews conducted at the end of the 4th and 6th semesters of study, as described below.

In the fourth semester of study, normally the spring of the second year, each student shall submit two papers, approximately 8,000 words each, in different fields of philosophy (ordinarily two substantially revised papers previously submitted in seminars). The choice of papers should be made in consultation with the Graduate Adviser. The second year evaluation will be made on the basis of faculty review of the submitted papers and consideration of the student's total record.

For the review following the sixth semester of study, students are to select one from a list of pre-designated areas in philosophy and master the material on a pre-assigned reading list of important works in that area. At the beginning of the sixth semester, each student will take a written examination, designed by the faculty of the School of Philosophy, on the materials covered in the relevant reading list followed by an oral examination exploring their knowledge of the field. This examination must be passed by the end of the sixth semester. The examining committee for each student will consist of faculty conversant with the field and appointed by the school.

Qualifying Examination

This examination consists of a written prospectus of the proposed dissertation and an in-depth oral examination on the form and subject matter of the proposed dissertation. All faculty members may inspect the prospectus and be present at the oral, but evaluation of the qualifying examination is the responsibility of the student's qualifying exam committee. The examination is not passed if two or more members of the qualifying exam committee find it unsatisfactory.

The qualifying examination is not offered in the summer. Those who intend to take this examination must meet all the conditions specified in the section on general requirements for the Ph.D. Students are expected to pass the qualifying exam by the end of the seventh semester. Students who have not passed the qualifying exam by the end of the seventh semester will be subject to faculty review, and may not be allowed to continue in the program.

Doctoral Dissertation

When the student passes the qualifying examination, a dissertation committee (see Graduate Advisement), replacing the qualifying exam committee, is appointed by the director of the school in consultation with the student and the philosophy faculty. Normally, the qualifying exam committee simply becomes the dissertation committee. This committee and the candidate will then agree upon how the dissertation is to be developed and written. The dissertation must be an original contribution to some well-defined area in philosophy, and must give evidence of the student's ability to do respectable, large-scale research, thinking, and writing in the field. The school requires the defense oral when the research and writing of the dissertation is substantially complete. Attendance at this oral examination is open to all members of the university faculty, but the examination is conducted and evaluated by the candidate's dissertation committee. The faculty normally works with the dissertations only in the fall and spring semesters, and the student should plan accordingly.

Graduate Advisement

In addition to the departmental graduate adviser, who has the formal role in graduate advising, each student will be matched with a personal adviser, who will share responsibility with the graduate adviser for monitoring a student's progress semester by semester. The graduate adviser is available to counsel any graduate student on all aspects of the graduate program. A student's personal adviser will consult informally with the student semester by semester on how to interpret his or

her grades and especially the written reports provided by the instructor for each course in which the student is enrolled, discuss informally the student's selection of courses each semester, and generally keep track of the student's progress in the program. At the appropriate time, the student will consult his or her adviser concerning the appointment of a faculty committee for guidance and supervision. An official qualifying exam committee will be appointed at the time the student passes the screening examination; for the rules governing its establishment and makeup, see General Requirements for the Doctor of Philosophy degree in the Graduate School section. The qualifying exam committee will meet with the student soon after its appointment, and at least once each academic year thereafter.

Courses of Instruction

PHILOSOPHY (PHIL)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

PHIL 101g Philosophical Foundations of Modern Western Culture (4) The influence on modern Western culture of philosophical thought about reality, knowledge and morality as developed by such philosophers as Descartes, Leibniz and Kant.

PHIL 115g Ancient Greek Culture and Society (4) Focus on the literary achievement from the beginning of Greek literature to the fourth century with a special emphasis on the philosophers.

PHIL 135g Legal Controversies and Ethical Principles (4) Philosophical theories of law and applications to controversies of importance to society and our legal system, such as free speech, civil disobedience, and self-defense. *Concurrent enrollment:* WRIT 140.

PHIL 137gm Social Ethics for Earthlings and Others (4, FaSp) A systematic study of contemporary issues in social and political philosophy engaging multimedia works of science fiction to illuminate classic Western moral and political theories.

PHIL 140g Contemporary Moral and Social Issues (4, FaSpSm) Critical study of controversial social issues such as abortion, euthanasia, the death penalty, war and terrorism, pornography, and economic justice. *Concurrent enrollment:* WRIT 140.

PHIL 141g The Professions and the Public Interest in American Life (4) The study of the nature and role of professionals in life and society, forces that shape and direct them, foundations and applications of professional ethics. *Concurrent enrollment:* WRIT 140.

PHIL 155g Modern Philosophy and the Meaning of Life (4) Modern philosophical treatments of the problem of the meaning or purpose of human life; special attention to Existentialism.

PHIL 220g Science, Religion and the Making of the Modern Mind (4) Philosophical and religious implications of the scientific revolution of the 17th century and the Darwinian revolution in the 19th century.

PHIL 225g Love and its Representations in Western Literature, Philosophy, and Film (4, FaSp) Key works that have shaped the European and American cultural inheritance, with a special focus on the nature of love (and marriage or domesticity). *Concurrent enrollment:* MDA 140.

PHIL 242 Theories of Art (4) An introduction to general theories of art and to issues concerning particular arts such as literature and drama, photography and film, painting, architecture and music.

PHIL 250ab Elementary Formal Logic (2-2, FaSp) Critical reasoning skills and their many everyday applications; theory of logically correct reasoning and its associated formal techniques.

PHIL 262g Mind and Self: Modern Conceptions (4) Philosophical problems about the nature of mind associated with the rise of modern science; topics include the mind/body relation, personal identity, rationality and freedom.

PHIL 285Lg Knowledge, Explanation, and the Cosmos (4, FaSpSm) The nature and limits of knowledge and explanation, and challenges in understanding the origin of the universe and the place of intelligent life within it.

PHIL 286Lg Issues in Space and Time (4) Examining the nature of space and time, how they relate, and how material objects relate to them. Some included topics: substantivalism, temporal directionality, persistence, hyperspace.

PHIL 300 Introduction to the Philosophical Classics (4) An examination of philosophical works which have had a profound impact on the nature of Western thought.

PHIL 315 History of Western Philosophy: Ancient Period (4) Major figures in the history of Western philosophical thought from the pre-Socratics to the Hellenistic period; emphasis on Plato and Aristotle.

PHIL 317 History of Western Philosophy: Medieval Period (4) Central themes in Jewish, Christian and Islamic philosophy from late antiquity through the scholastic period.

PHIL 320 History of Western Philosophy: Modern Period (4) The development of philosophy from the 16th to the 19th centuries; emphasis on Continental Rationalism, British Empiricism, and the philosophy of Kant.

PHIL 330 Theories of Law (4) Examination of some of the major classical and contemporary theories of the nature and functions of law and of its relation to morality.

PHIL 335 Theoretical Models of Leadership (4, FaSp) Political philosophers and social theorists on leadership: political obligation; the art of government; leadership in civil society and counter-cultural dissent; models of cosmopolitan leadership.

PHIL 337 History of Modern Political Philosophy (4) Analysis of some of the main political philosophies of the modern era; emphasis on the ethical and metaphysical foundations of political philosophy.

PHIL 338 Political Economy and Social Issues (4, Sp) (Enroll in ECON 338)

PHIL 340 Ethics (4, FaSpSm) Study of major philosophical theories of moral right and wrong, such as utilitarianism, Kantianism, egoism, virtue ethics, and theological ethics.

PHIL 345 Greek Ethics (4) Examination of the progress of the ethical thought and legal and political institutions of ancient Greece with an emphasis on the Nichomachean Ethics of Aristotle.

PHIL 347 Philosophy in Literature (4) Philosophical content in representative European and American literature; philosophical problems about literature such as the nature of truth and meaning in fiction.

PHIL 350 Symbolic Logic (4) Introduction to basic techniques of propositional and quantificational logic, and elements of probability. Especially useful to philosophy, mathematics, science, and engineering majors.

PHIL 351 Reasoning and Logic (4) Study of reasoning as a strategy for arriving at knowledge in dependence upon logical theory. Logical theories are developed alongside historically influential strategies of reasoning. Not open to freshmen.

PHIL 352 Logic and Language (4) Introduction to modern symbolic logic, with applications to the philosophy of language, plus meta-logical and philosophical results about its scope and limits.

PHIL 355 Existentialism (4) A critical survey of major 19th and 20th century existentialist writers, including Kierkegaard, Dostoevsky, Tolstoy, Kafka, Nietzsche, Camus, and Sartre.

PHIL 360 Epistemology and Metaphysics (4) Examination of problems in metaphysics and/or epistemology. Conducted at the intermediate level.

PHIL 361 Philosophy of Religion (4) The existence of God; mysticism, miracles and the possibility of disembodied existence; the problem of evil; religion and morality; the meaning of religious language.

PHIL 363 Philosophy of Perception (4) Philosophical investigation of sense perception as it relates to issues in epistemology, metaphysics, the philosophy of mind, and the philosophy of science.

PHIL 385 Science and Rationality (4) Examination of the rationality of the scientific enterprise, and of the relation between science and human values.

PHIL 390 Special Problems (1–4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

PHIL 410 Early Greek Thought (4) A study of the Greek thinkers from Homer to the age of Socrates; emphasis on the pre-Socratic philosophers.

PHIL 411 Plato (4) Detailed study of the evolution of Plato's thought as revealed in selected dialogues.

PHIL 415 Aristotle (4) Intensive study of selected topics taken from Aristotle's writings in natural philosophy, in metaphysics, and in other areas of philosophy.

PHIL 421 Continental Rationalism (4) Development of philosophy on the continent from the 17th to the 19th centuries; emphasis on the philosophical works of Descartes, Leibniz, and Spinoza.

PHIL 422 British Empiricism (4) Development of philosophy in Great Britain from the 17th to the 19th centuries; emphasis on Locke, Berkeley, and Hume.

PHIL 423 The Critical Philosophy of Kant (4) Intensive study of the philosophical works of Kant.

PHIL 424 19th Century Philosophy (4) Leading figures and movements in 19th century philosophy; works of such philosophers as Hegel, Schopenhauer, Mill, Nietzsche, and Bradley.

PHIL 425 American Philosophy (4) Leading figures and movements in American philosophy; works of such philosophers as Jonathan Edwards, Charles Peirce, William James, John Dewey, and C.I. Lewis.

PHIL 426 20th Century European Philosophy (4) Main philosophers and movements from 1900, including the major developments within phenomenology and existentialism, the emergence of structuralism and hermeneutics.

PHIL 427 20th Century Anglo-American Philosophy (4) The nature and function of analysis as a philosophical method; the development of major metaphysical, epistemological, and ethical views; Russell, Wittgenstein, Carnap, Quine and others.

PHIL 428 Anglo-American Philosophy Since 1950 (4) The maturing of the analytic tradition from the later Wittgenstein through Ryle, Strawson, Hare, Austin, Grice, Quine, Davidson, Kripke, and beyond.

PHIL 430 Philosophy of Law (4) Philosophical theories about the nature of law, relations between law and morality, and analysis of normative concepts central to law, such as responsibility, punishment, negligence.

PHIL 431 Law, Society, and Politics (4, Fa) A systematic presentation of the main philosophical perspectives on the interactions between law and the social-political aspects of our lives.

PHIL 437 Social and Political Philosophy (4) The nature of man and society, the nature and justification of state and government, political rights and political obligation, justice and equality.

PHIL 440 Contemporary Ethical Theory (4) Ethical theories in the 20th century; contemporary theories of value and obligation; metaethical theories; intuitionism, naturalism, and non-cognitivism; concepts of justice, human rights, and freedom.

PHIL 442 History of Ethics to 1900 (4) An historical and critical study of the great moral philosophers, including Plato, Aristotle, Aquinas, Kant, and the British moralists.

PHIL 443 Value Theory (4) The evaluation of individual and social ends; consideration of such topics as values and rational choice, the good of a person, hedonism, welfare, ideals, and utopias.

PHIL 445 Philosophy of the Arts (4) Principal theories of the nature of, and response to, art; examination of form and content in various arts; consideration of the role of criticism.

PHIL 446 Aesthetics and the Film (4) Problems in the philosophy of art raised by film, such as the notion of "cinematic"; the nature of interpretation of films; criteria for evaluating films.

PHIL 450 Intermediate Symbolic Logic (4) Systematic study of the metatheory of quantificational logic, with applications to questions of decidability and completeness of formal systems including Godel's Incompleteness Theorems.

PHIL 452 Modal Logic (4) Elements of propositional and quantified modal logic and the logic of counterfactual conditionals with an eye to some of their applications in contemporary philosophy. *Prerequisite:* PHIL 350, or PHIL 351, or PHIL 352.

PHIL 455 Phenomenology and Existentialism (4, Irregular) Close study of major writings of Husserl, Heidegger, and Sartre.

PHIL 460 Metaphysics (4) Systematic introduction to basic concepts, including identity, difference, existence, individuals, substance, quality, and relation; emphasis on idealism, materialism, and the ontology of intentionality.

PHIL 462 Philosophy of Mind (4) Examination of contemporary theories of mind and its place in the natural world.

PHIL 463 Theories of Action (4) Systematic investigation of action, the mental states involved in action, the reasoning processes that lead to action, and related concepts including intentionality and free will.

PHIL 465 Philosophy of Language (4) The nature of communication, meaning, reference, truth, necessity, speech acts, convention, and language.

PHIL 470 Theory of Knowledge (4) Examination of contemporary accounts of the nature, scope, sources — and value — of human knowledge and justified belief.

PHIL 471 Metaphysics and Epistemology (4) Classic issues in epistemology and the philosophy of language, leading up to the application of context-sensitivity in language to the problem of skepticism. Open only to philosophy majors. *Prerequisite:* PHIL 250b or PHIL 350 or PHIL 351 or PHIL 352; *recommended preparation:* at least one 400-level PHIL course.

PHIL 472 Moral Philosophy (4) In-depth study of some important work from the last few decades concerning the nature and status of moral reasons, moral obligations, and moral discourse. Open only to philosophy majors. *Prerequisite:* PHIL 250b or PHIL 350 or PHIL 351 or PHIL 352; *recommended preparation:* at least one 400-level PHIL class.

PHIL 473 Wittgenstein (4) A detailed study of the philosophical works of Ludwig Wittgenstein.

PHIL 480 Philosophy of Mathematics (4) The nature of mathematical truth and the nature of mathematical entities.

PHIL 485 Development of Physical Science (4) Concepts central in the advance of physical science such as the concepts of space, time, mass, force; philosophical problems concerning quantum mechanics.

PHIL 486 Methodologies of the Sciences (4) Comparison of the methodologies of the natural, social, and/or behavioral sciences; consideration of such topics as the concept of scientific law, prediction, explanation, confirmation.

PHIL 490x Directed Research (1–8, max 12) Individual research and readings. Not available for graduate credit.

PHIL 494 Senior Thesis (4) Independent studies for philosophy majors, and guidance in the preparation of the senior thesis for students who wish to graduate with honors in philosophy. Not open to graduate students.

PHIL 499 Special Topics (2–4, max 8) Selected topics in various specialty areas within philosophy.

PHIL 500 Introduction to Contemporary Philosophical Literature (4, Fa) Analysis of selected philosophical problems and theses of current interest; explication of major contemporary papers and/or books is emphasized.

PHIL 501 Seminar in Recent Philosophy (4, max 16, Sp) Contemporary philosophical issues and literature.

PHIL 503 Introduction to Contemporary Philosophical Literature on Value (4, Sp) Analysis of selected philosophical problems and theses of current interest; explication of major contemporary papers and/or books is emphasized.

PHIL 505 Pro-Seminar in Central Topics in Contemporary Philosophy (4, Irregular) Key developments in central areas of philosophy are used to provide training in philosophical analysis, criticism, and the writing of precise philosophical prose.

PHIL 510 Philosophical Logic (4, Sp) Applications of logical theory to contemporary philosophical research. Elements of model theory, recursion theory; Goedel's Incompleteness results; modal logic and its interpretations. *Recommended preparation:* PHIL 350.

PHIL 515 Studies in Ancient and Medieval Philosophy (4, max 16) Problems in research in selected portions of ancient and medieval philosophy.

PHIL 520 Studies in Modern Philosophy (4, max 16) Problems in research in selected portions of modern philosophy.

PHIL 525 Seminar in Phenomenology (4) The origin, principles, and development of the phenomenological movement from Brentano to Merleau-Ponty.

PHIL 530 Seminar in Philosophy of Law (4) Theories of the nature of law; emphasis on recent writing; legal concepts such as rights, powers, liability, legal responsibility, law, and morality.

PHIL 537 Seminar in Social and Political Philosophy (4, max 16) Advanced literature on selected topics in social and political philosophy, including the nature of law, man, and society; ideals such as justice and freedom.

PHIL 540 Seminar in Ethics (4, max 16) Advanced topics and literature in ethical theory.

PHIL 545 Seminar in Aesthetics (4) Advanced topics in the philosophy of the arts. Contemporary views on such problems as the nature of art and the role of criticism.

PHIL 550 Advanced Topics in Formal Logic (4) Consistency and completeness of the predicate calculus; truth and validity; rudiments of model logic. *Prerequisite:* PHIL 450.

PHIL 551 Seminar in the Philosophy of Logic (4) Advanced topics in logic and/or philosophy of logic.

PHIL 560 Seminar in Metaphysics (4, max 16, Fa) Advanced topics in metaphysics.

PHIL 565 Philosophy of Language (4, max 12, FaSp) Philosophical issues in the empirical study of language concerning the relationship between linguistic meaning and the use of sentences to assert and convey information.

PHIL 570 Seminar in Epistemology (4, max 16) Advanced topics in epistemology.

PHIL 585 Seminar in Philosophy of Science (4, max 16) Advanced topics in the philosophy of science.

PHIL 589 Writing for Publication in Philosophy (4, max 8, Sp) Intensive writing seminar in which students read cutting-edge philosophy and take supervised steps towards crafting critical essays for publication. *Prerequisite:* PHIL 500, PHIL 505.

PHIL 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PHIL 593x Teaching Philosophy (2, Fa) Basic principles of philosophical pedagogy, with emphasis on practical applications and the importance of career-long skill development. Required for first-semester teaching assistants in philosophy. Not available for major credit. Open only to philosophy doctoral students. Graded CR/NC.

PHIL 594abz Master's Thesis (2-2-0) Credit on acceptance of thesis. Graded IP/CR/NC.

PHIL 599 Special Topics (2-4, max 8) Major trends of current thought; specific topics to be announced.

PHIL 636 Seminar in Semantics (3, max 12) (Enroll in LING 636)

PHIL 700x Dissertation Seminar (2, max 12) A focused environment in which to present and evaluate dissertation work-in-progress. Focus on peer and faculty feedback, developing professional presentation skills, improving critical communication skills. Graded CR/NC. Open only to philosophy doctoral students.

PHIL 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PHIL 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC.

Physical Education

Physical Education Building 108
(213) 740-2488

Fax: (213) 821-1058

Email: phed@dornsife.usc.edu
dornsife.usc.edu/phed

Director: Steve VanKanegan, M.S.

Administrative Coordinator: Amber Harris, MPW

Faculty

Master Lecturer: Steve VanKanegan, M.S.

Senior Lecturers: Timothy L. Burton, M.Ed.; Danielle Roman, M.S.

Lecturers: Steve Hsu, M.S.; John Jessee, M.S.; Isabelle Pilliere Mazumdar, B.A.; Jennifer Rooney, M.S.

The physical education program provides a variety of offerings in fitness and activities classes designed to promote health and general fitness based upon individual goals and needs. Fitness classes focus primarily

on development of muscle strength, muscle endurance, cardiorespiratory endurance, flexibility, general wellness principles and nutritional guidelines. Activities classes stress fundamental techniques, tactics, rules, etiquette and the importance of leisure time activities to physical, mental and social well-being.

General Requirements

No more than four units of physical education activity courses may be applied to a student's overall unit requirement, toward his or her USC degree.

Registration in courses PHED 102ab-160 is contingent upon assessment of students' knowledge and competence in performance during the first two class meetings. Students who wear glasses while participating in vigorous activities must secure departmental approval of provisions made for eye protection in courses PHED 140. Course PHED 165 is reserved for students who are reporting for regular freshman or varsity athletic squads.

To obtain a prerequisite waiver to take a *b* class before having taken the *a* section, the instructor's approval

and signature are needed. Students should be aware that in the future they cannot take the prerequisite course in the activity for credit after having it waived.

Courses of Instruction

PHYSICAL EDUCATION (PHED)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

PHED 102ab Weight Training (1-1, FaSp) *a:* Improvement of body shape, muscle endurance, and muscle strength; understanding of weight training and nutrition principles that can be utilized for future weight training development. *b:* Training techniques and application of advanced weight training principles through weekly workouts; personal trainer certification exam preparation.

PHED 104ab Self-Defense (1-1, FaSp) *a:* Basic instruction of self-defense for beginners; strategies for standing and ground fighting situations with and without weapons. *b:* Intermediate instruction involving more advanced fighting strategies and techniques.

PHED 106ab Physical Conditioning (1-1, FaSp) *a:* Improvement in cardiorespiratory endurance, body composition, muscle endurance and flexibility; running, circuit training, resistance exercises; fitness principles and nutrition to develop individualized program. *b:* Advanced training methods focusing on continuing gains in fitness level.

PHED 108 High Stress Physical Conditioning (1) Rigorous physical conditioning with emphasis on distance running and development of cardiovascular and upper body strength. A challenging regimen to enhance stamina and endurance. *Prerequisite:* PHED 106b or permission of instructor.

PHED 110ab Swimming (1-1, FaSp) *a:* Instruction and practice in basic strokes for beginners and intermediate swimmers; elementary springboard diving; water safety techniques; endurance training as a fitness program. *b:* Advanced instruction and practice of strokes; advanced endurance training.

PHED 114 Lifesaving (1) American Red Cross Senior Lifesaving. *Prerequisite:* PHED 110ab or ability to pass Skills Test II.

PHED 115 Surfing (1, FaSp) Fundamental instruction of surfing skills; water safety and etiquette; wave recognition and forecast interpretation; surf culture; board selection; surf related strengthening and stretching.

PHED 120ab Yoga (1-1, FaSp) *a:* Introduction to meditation, breathing techniques and postures as a means towards relaxation; increase muscle flexibility; understanding of basic anatomy and nutritional guidelines. (Duplicates credit in former PHED 120.) *b:* A continuing study of intermediate and advanced yoga postures, breathing techniques and meditation as a means toward relaxation and stress-reduction.

PHED 121 Yoga for Athletic Performance (1, FaSpSm) Skills and strategies for injury prevention and recovery from athletic training; application of yoga principles to improve posture, strength, flexibility, core stability and concentration. *Prerequisite:* PHED 120a.

PHED 124 Walking for Fitness (1, FaSp) Develop a strong fitness foundation through walking; fitness assessment and individualized programs; gait biomechanics and power walking; injury prevention; strategies for special populations.

PHED 129ab Aerobic Fitness (1-1, FaSpSm) *a:* Aerobic exercise focusing on cardiorespiratory endurance encompassing a variety of training methods such as high/low impact aerobics, body sculpting, circuit training and nutritional guidelines. *b:* Group exercise teaching techniques and application of fitness principles through weekly workouts; group fitness certification exam preparation.

PHED 131 Step Aerobics (1, FaSp) Development of physical fitness components through step aerobics; total body workout utilizing step movements and body sculpting exercises.

PHED 133 Rock Climbing (1, FaSp) Acquisition of basic rock climbing skills, muscle strength, endurance and balance, climbing safety, ethics and environmental considerations; understanding equipment, problem solving.

PHED 138 Beach Volleyball (1, FaSpSm) Fundamental instruction of skills and tactics specific to sand volleyball and related physical conditioning; rules and strategies; history and culture.

PHED 139ab Volleyball (1-1, FaSp) *a:* Introduction to beginning and intermediate volleyball skills, rules, game tactics, and strategies. Emphasis on the development of: passing, setting, hitting, serving, blocking, and digging. *b:* Advanced techniques; focus on offenses and defenses used in game situations.

PHED 140abc Tennis (1-1-1, FaSp) *a:* Fundamental instruction of basic strokes for beginners and intermediate players; rules, scoring, court etiquette, strategies; singles and doubles; practice and match play. *b:* Reinforcement of basic strokes and instruction of advanced strokes; advanced strategies; singles and doubles; practice and match play. *c:* Development of strokes and strategies for advanced tournament players; drills and matches.

PHED 143ab Racquetball (1-1, FaSp) *a:* Instruction of basic stroke technique for beginners and intermediate players; rules, scoring, game tactics; practice of strokes and competition. *b:* Development of advanced skills and strategies; singles and doubles practice and competition.

PHED 150 Table Tennis (1, FaSp) Fundamental instruction of basic strokes for beginning and intermediate players; rules, scoring strategies; singles and doubles; practices and match play.

PHED 154ab Soccer (1-1, FaSp) *a:* Development of basic skills for beginners, intermediate and advanced players; rules, positioning elements of play, small group and team tactics; full field scrimmages. *b:* Advanced development of skills, positioning, tactics and conditioning.

PHED 155 Golf (1, FaSp) Basic skills development and knowledge in stance, grip and swing mechanics; course strategy; use of woods, irons and putting; history rules and etiquette.

PHED 156ab Basketball (1-1, FaSp) *a:* Basic skill development in dribbling, passing, shooting, rebounding and defense; rules, history, and etiquette; drills and full court games. *b:* Development of advanced skills; team strategy; offenses and zone defenses; drills and full court games.

PHED 160 Stress Management for Healthy Living (2, FaSp) Instruction on the effects of stress as it relates to work, sport and academics; coping strategies are discussed and applied through physical conditioning interventions.

PHED 161 First Aid (1) First Aid safety education and infant, child, and adult CPR; demonstrated proficiency and successful completion of exam prepares students for Red Cross certification. (Duplicates credit in former PHED 171.)

PHED 165 Varsity Athletics (1, max 4) Participation in the university's inter-collegiate programs as sanctioned and governed by the PAC-10 Conference and/or the NCAA. Graded CR/NC.

Physics and Astronomy

Seeley G. Mudd Building 408

Main: (213) 740-0848;

Undergraduate: (213) 740-1140;

Graduate: (213) 740-8685

FAX: (213) 740-8094

Email: physics@dornsife.usc.edu
dornsife.usc.edu/physics

Chair: Hans Bozler, Ph.D.

Faculty

University Professor and Professor of Physics and Education: Lloyd Armstrong, Jr.

Presidential Professor of Physics and Medicine: Murray Gell-Mann, Ph.D.

Professors: Itzhak Bars, Ph.D.; Gerd Bergmann, Ph.D.; N. Eugene Bickers, Ph.D.*; Hans M. Bozler, Ph.D.; P. Daniel Dapkus, Ph.D. (*Electrical Engineering*); Werner Däppen, Ph.D.*; Jack Feinberg, Ph.D.*;

Christopher M. Gould, Ph.D.*; Martin A. Gundersen, Ph.D. (*Electrical Engineering*); Stephan Haas, Ph.D.*; Robert W. Hellwarth, Ph.D. (*Electrical Engineering*); Clifford Johnson, Ph.D.*; Darrell L. Judge, Ph.D.; Rajiv Kalia, Ph.D.; Vitaly Kresin, Ph.D.; Joseph Kunc, Ph.D. (*Aerospace Engineering*); Anthony J. Levi, Ph.D. (*Electrical Engineering*); Daniel Lidar, Ph.D. (*Chemical Engineering*); Anupam Madhukar, Ph.D. (*Materials Science*); Aiichiro Nakano, Ph.D. (*Computer Science*); Dennis Nemeschansky, Ph.D.; Elena Pierpaoli, Ph.D.; Krzysztof Pilch, Ph.D.; Edward J. Rhodes, Jr., Ph.D.*;

Hubert Saleur, Ph.D.; Robin Shakeshaft, Ph.D.;

Armand Tanguay, Ph.D. (*Electrical Engineering*); Priya Vashishta, Ph.D. (*Materials Science*); Andrey Vilesov, Ph.D. (*Chemistry*); William G. Wagner, Ph.D.; Nicholas P. Warner, Ph.D.*; Paolo Zanardi, Ph.D.

Associate Professors: Todd A. Brun, Ph.D. (*Electrical Engineering*); Jia Grace Lu, Ph.D.; Richard S. Thompson, Ph.D.

Assistant Professors: Mohamed El-Naggar, Ph.D.; Christoph A. Haselwandter, Ph.D.; Michelle Povinelli, Ph.D. (*Electrical Engineering*); Susumu Takahashi, Ph.D. (*Chemistry*)

Professors (Research): Leonid Didkovsky, Ph.D.; Geraldine J. Peters, Ph.D.

Associate Professor (Research): Rosa Di Felice, Ph.D.

Assistant Professors (Research): Lorenzo Campos Venuti, Ph.D.; Loris Colombo, Ph.D.; Ken-ichi Nomura, Ph.D.

Emeriti Professors: Robert K. Cole, Ph.D.; Melvin A. Daybell, Ph.D.; Harriet H. Forster, Ph.D.; Tu-Wan Chang, Ph.D.

Emeritus Professor (Research): Chung-Yung (Robert) Wu, Ph.D.

*Recipient of university-wide or college teaching award.

Degree Programs

The Department of Physics and Astronomy offers the Bachelor of Science in Physics, Bachelor of Science in Astronomy, Bachelor of Science in Physics/Computer Science, Bachelor of Arts in Physics, Bachelor of Arts in Astronomy, Bachelor of Science in Biophysics, Bachelor of Science in Physical Sciences, a minor in physics or astronomy, Master of Science in Physics, Master of Science in Physics for Business Applications, Master of Arts in Physics and Doctor of Philosophy in Physics.

Undergraduate Degrees

Bachelor of Science in Physics

This program is intended primarily for students who are interested in a career in physics.

REQUIRED LOWER-DIVISION COURSES		UNITS
CHEM 115aLbL**	Advanced General Chemistry	4-4
MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 226	Calculus III	4
MATH 245	Mathematics of Physics and Engineering I	4
PHYS 161L*	Advanced Principles of Physics I	4
PHYS 162L*	Advanced Principles of Physics II	4
PHYS 163L*	Advanced Principles of Physics III	4
PHYS 190	Physics Discovery Series	1

REQUIRED UPPER-DIVISION COURSES		UNITS
MATH 445	Mathematics of Physics and Engineering II	4
PHYS 304	Mechanics	4
PHYS 316	Thermodynamics and Statistical Mechanics	4
PHYS 408ab	Electricity and Magnetism	4-4
PHYS 438ab	Introduction to Quantum Mechanics and its Applications	4-4
PHYS 440	Introduction to Condensed Matter Physics	4
PHYS 492L	Senior Laboratory	4
PHYS 493L	Advanced Experimental Techniques	4
Total units		77
*PHYS 151L, PHYS 152L and PHYS 153L may be substituted for the sequence PHYS 161L, PHYS 162L and PHYS 163L.		
**CHEM 105aLbL may be substituted for the sequence CHEM 115aLbL.		

Bachelor of Science in Astronomy

This program is intended primarily for students who are interested in a career in astronomy.

REQUIRED LOWER-DIVISION COURSES		UNITS
MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 226	Calculus III	4
MATH 245	Mathematics of Physics and Engineering I	4
PHYS 161L*	Advanced Principles of Physics I	4
PHYS 162L*	Advanced Principles of Physics II	4
PHYS 163L*	Advanced Principles of Physics III	4

REQUIRED UPPER-DIVISION COURSES		UNITS
ASTR 400	The Solar System	4
ASTR 410	Stellar Astronomy	4
ASTR 420	Galaxies and Cosmology	4
ASTR 440	Astrophysics	4
MATH 445	Mathematics of Physics and Engineering II	4
PHYS 304	Mechanics	4
PHYS 316	Thermodynamics and Statistical Mechanics	4
PHYS 408a	Electricity and Magnetism	4
PHYS 438ab	Introduction to Quantum Mechanics and its Applications	4-4
PHYS 493L	Advanced Experimental Techniques	4
Total units		72
*PHYS 151L, PHYS 152L and PHYS 153L may be substituted for the sequence PHYS 161L, PHYS 162L and PHYS 163L.		

Bachelor of Science in Physics/Computer Science

This program is intended for students with dual interests in physics and computer science who wish to complete the essential courses for both majors within their normal four-year career.

REQUIRED LOWER-DIVISION COURSES		UNITS
CSCI 101L	Fundamentals of Computer Programming	3
CSCI 102L	Data Structures	3
CSCI 200L	Object-Oriented Programming	3
CSCI 201L	Principles of Software Development	4
CSCI 271	Discrete Methods in Computer Science	3
EE 101	Introduction to Digital Logic	3
MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 225	Linear Algebra and Linear Differential Equations	4
MATH 226	Calculus III	4
MATH 245	Mathematics of Physics and Engineering I	4
PHYS 151L	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4

REQUIRED UPPER-DIVISION COURSES		UNITS
CSCI 303	Design and Analysis of Algorithms	3
CSCI 402	Operating Systems	4
EE 357	Basic Organization of Computer Systems	3
MATH 445	Mathematics of Physics and Engineering II	4
PHYS 304	Mechanics	4
PHYS 408ab	Electricity and Magnetism	4-4
PHYS 438ab	Introduction to Quantum Mechanics and its Applications	4-4
PHYS 495	Senior Project	2
Total units		83

Bachelor of Arts in Physics

This program is intended for students with an interest in physics who may not intend to pursue a career in physics.

REQUIRED LOWER-DIVISION COURSES		UNITS
CHEM 105aLbL**	General Chemistry	4-4
MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 226	Calculus III	4
MATH 245	Mathematics of Physics and Engineering I	4
PHYS 161L*	Advanced Principles of Physics I	4
PHYS 162L*	Advanced Principles of Physics II	4
PHYS 163L*	Advanced Principles of Physics III	4
PHYS 190	Physics Discovery Series	1

REQUIRED UPPER-DIVISION COURSES		UNITS
MATH 445	Mathematics of Physics and Engineering II	4
PHYS 304	Mechanics	4
PHYS 316	Thermodynamics and Statistical Mechanics	4
PHYS 408a	Electricity and Magnetism	4

PHYS 438a	Introduction to Quantum Mechanics and its Applications	4	MATH 125	Calculus I	4
PHYS 492L	Senior Laboratory	4	MATH 126	Calculus II	4
			MATH 226	Calculus III	4
			MATH 245	Mathematics of Physics and Engineering I	4
Choose one:		4	PHYS 161L**	Advanced Principles of Physics I	4
PHYS 408b	Electricity and Magnetism		PHYS 162L**	Advanced Principles of Physics II	4
PHYS 438b	Introduction to Quantum Mechanics and its Applications		PHYS 163L**	Advanced Principles of Physics III	4
PHYS 440	Introduction to Condensed Matter Physics		PHYS 190	Physics Discovery Series	1
PHYS 493L	Advanced Experimental Techniques				
Total units		65			

*PHYS 151L, PHYS 152L and PHYS 153L may be substituted for the sequence PHYS 161L, PHYS 162L and PHYS 163L.

**CHEM 115aLbL may be substituted for the sequence CHEM 105aLbL.

Bachelor of Arts in Astronomy

This program is intended for students with an interest in astronomy who may not intend to pursue a career in the field.

REQUIRED LOWER-DIVISION COURSES		UNITS
MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 226	Calculus III	4
MATH 245	Mathematics of Physics and Engineering I	4
PHYS 161L*	Advanced Principles of Physics I	4
PHYS 162L*	Advanced Principles of Physics II	4
PHYS 163L*	Advanced Principles of Physics III	4

REQUIRED UPPER-DIVISION COURSES		UNITS
ASTR 400	The Solar System	4
ASTR 410	Stellar Astronomy	4
ASTR 420	Galaxies and Cosmology	4
ASTR 440	Astrophysics	4
PHYS 304	Mechanics	4
PHYS 316	Thermodynamics and Statistical Mechanics	4
PHYS 493L	Advanced Experimental Techniques	4
Total units		56

*PHYS 151L, PHYS 152L and PHYS 153L may be substituted for the sequence PHYS 161L, PHYS 162L and PHYS 163L.

Bachelor of Science in Biophysics

This program is intended for students with an interest in the interdisciplinary field of biophysics. The degree program provides the physics and biology background necessary for the field while simultaneously fulfilling medical school entrance requirements.

REQUIRED LOWER-DIVISION COURSES		UNITS
BISC 120L	General Biology: Organismal Biology and Evolution	4
BISC 220L	General Biology: Cell Biology and Physiology	4
CHEM 115aLbL*	Advanced General Chemistry	4-4

MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 226	Calculus III	4
MATH 245	Mathematics of Physics and Engineering I	4
PHYS 161L**	Advanced Principles of Physics I	4
PHYS 162L**	Advanced Principles of Physics II	4
PHYS 163L**	Advanced Principles of Physics III	4
PHYS 190	Physics Discovery Series	1

REQUIRED UPPER-DIVISION COURSES		UNITS
BISC 320L	Molecular Biology	4
BISC 330L	Biochemistry	4
CHEM 322aBL	Organic Chemistry	4-4
MATH 445	Mathematics of Physics and Engineering II	4
PHYS 304	Mechanics	4
PHYS 316	Thermodynamics and Statistical Mechanics	4
PHYS 408a	Electricity and Magnetism	4
PHYS 438a	Introduction to Quantum Mechanics and its Applications	4
PHYS 444	Physical Biology: From Molecules to Cells	4
Total units		85

*CHEM 105aLbL may be substituted for the sequence CHEM 115aLbL.

**PHYS 151L, PHYS 152L and PHYS 153L may be substituted for the sequence PHYS 161L, PHYS 162L and PHYS 163L.

Bachelor of Science in Physical Sciences

This program is intended for students with an interest in the physical sciences. The program is designed to allow students interested in teaching at the secondary level to enroll in courses required for the California Single Subject Teaching credential offered through the School of Education.

REQUIRED LOWER-DIVISION COURSES		UNITS
CHEM 115aLbL**	Advanced General Chemistry	4-4
GEOL 105L	Planet Earth	4
PHYS 151L	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4
PHYS 153L	Fundamentals of Physics III: Optics and Modern Physics	4

REQUIRED UPPER-DIVISION COURSES		UNITS
Astronomy elective*		4
Chemistry elective*		4
Earth Science elective*		4
Physics elective*		4
Three additional electives from these fields*		12

*Upper-division courses must be applicable to majors in their respective departments.

**CHEM 105aLbL may be substituted for the sequence CHEM 115aLbL.

OTHER COURSES		UNITS
MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 226	Calculus III	4
Total units		64

Department Requirements for a Minor in Physics

The physics minor is open to all students. Engineering students must take a minimum of three upper-division courses unique to the minor.

REQUIRED COURSES		28 UNITS
MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 226	Calculus III	4
MATH 245	Mathematics of Physics and Engineering I	4
PHYS 151L	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4
PHYS 153L	Fundamentals of Physics III: Optics and Modern Physics	4

ELECTIVES — CHOOSE 3		12 UNITS
PHYS 304	Mechanics	4
PHYS 316	Thermodynamics and Statistical Mechanics	4
PHYS 408a	Electricity and Magnetism	4
PHYS 438a	Introduction to Quantum Mechanics and its Applications	4
Total units		40

Department Requirements for a Minor in Astronomy

The astronomy minor is open to all students. A minimum of three courses taken toward the minor must be unique to the minor.

REQUIRED COURSES		24 UNITS
MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 226	Calculus III	4
PHYS 151L	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4
PHYS 153L	Fundamentals of Physics III: Optics and Modern Physics	4

ELECTIVES — CHOOSE 3		12 UNITS
ASTR 400	The Solar System	4
ASTR 410	Stellar Astronomy	4
ASTR 420	Galaxies and Cosmology	4
ASTR 440	Astrophysics	4
Total units		36

Grade Point Average in Major Subject

A GPA of C (2.0) or higher is required in all upper-division courses taken in the department for all of the above major degree programs. A grade of C (2.0) or higher is required in all courses in the department specifically listed as subject requirements.

Advisement

Advisement is required for all B.S. and B.A. degree candidates in the department. Students should meet with their departmental academic adviser at least once a semester to review the direction of their academic programs. Students who have not met with an adviser should contact the director of undergraduate affairs. Students are also encouraged to seek the advisement of faculty members whose specializations are appropriate to their intended field of graduate study.

Undergraduate Research Opportunities

Students are encouraged to become familiar with the research programs of the faculty in the department. Students who intend to pursue a Ph.D. and a career in research in physics or astronomy following graduation are strongly encouraged to become involved directly in one of the research programs, whether as summer research assistants or as part-time laboratory assistants during the academic year. Specific research opportunities will depend upon individual faculty research programs.

Graduate Degrees

The Department of Physics and Astronomy offers graduate study at the master's and doctoral degree levels. The graduate program prepares students for professional careers in research, teaching and developmental applications of physics.

Entering students spend time in intensive course work providing a broad background in advanced physics regardless of degree objective. Subsequent study involves a mix of course work, practical training and independent research (depending on degree objective). The doctoral program affords exceptionally close collaboration between students and faculty.

Research Areas: Experimental, Theoretical and Computational

Opportunities for research are offered in atomic, molecular and optical/laser physics, astrophysics, elementary particle theory, string theory, quantum field theory, earthquake physics, helioseismology, condensed matter physics, quantum electronics/nonlinear optics, space physics and ultralow temperature physics.

Degree Requirements

Graduate degrees in the Department of Physics and Astronomy are under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue (page 97xx) for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School.

Graduate study in physics is divided into three degree objectives:

Master of Science and Master of Arts in Physics Admission Requirements

The prerequisite for admission for a master's degree in the Department of Physics and Astronomy is a bachelor's degree in physics or a related field. All applicants for admission must take the Graduate Record Examinations, including the Physics Subject Test. Transcripts of undergraduate records as well as transcripts of any

graduate-level courses are required. The TOEFL or IELTS is required of international students applying for a teaching assistantship as well as for those applying for admission only. Applicants may be admitted as a degree candidate at the beginning of fall or spring semester.

Residence

All M.S. and M.A. degree students normally take at least three courses for each of two semesters. A total of 24 units of credit is required for graduation. Admitted students may transfer a maximum of 4 units of credit to apply toward the degree requirements.

Foreign Language Requirement

There is no foreign language requirement for the M.S. or M.A.

Course Requirements

Option A M.S. in Physics: The M.S. degree requires satisfactory completion of seven courses (exclusive of PHYS 500 and PHYS 594), of which no more than one course may be PHYS 590 Directed Research. In addition, satisfactory completion of a thesis (and 4 units of PHYS 594) is required.

Option B M.A. in Physics: The M.A. degree requires satisfactory completion of eight courses (exclusive of PHYS 500 and PHYS 590) plus a high level of performance on the comprehensive examination.

The required courses for either option are PHYS 504, PHYS 508a and PHYS 558a. For either option at least five courses must be at the 500 level or higher and remaining courses at the 400 level or higher; at least five courses must be in physics. All required physics courses must be passed with a grade of B- or better. No upper-division courses required for the B.A. in physics at USC may be counted for credit toward the M.A. or M.S. degree.

Comprehensive Examination

All master's degree candidates are required to take the departmental screening examination not later than during their second semester (excluding summer). This examination serves as the required comprehensive examination for the M.A. degree. A high level of performance is required for the M.A. degree, and a superior level is required for admission to (or continuation in) the Ph.D. program.

Master of Science in Physics for Business Applications Admission Requirements

The prerequisite for admission to the Master of Science in Physics for Business Applications is a bachelor's degree in physics, chemistry, mathematics, engineering or related field. Applicants should have previous upper-division course work in electricity and magnetism and quantum mechanics/modern physics. All applicants for admission must take the Graduate Record Examinations general test and are encouraged to take the Physics Subject Test. Transcripts of undergraduate records as well as transcripts of any graduate-level courses are required. The TOEFL or IELTS is required of international students applying for a teaching assistantship as well as for those applying for admission only. Applicants

may be admitted to the program at the beginning of fall or spring semester.

Residence

All full-time M.S. degree students are expected to take three courses toward the degree for each of the first three semesters. Part-time students are expected to complete at least three courses per calendar year. A total of 36 units of credit is required for graduation. Admitted students may transfer a maximum of 8 units of credit to apply toward degree requirements.

Foreign Language Requirement

There is no foreign language requirement for the M.S. degree.

Computer Language Requirement

By the end of the first semester in residence, students are required to demonstrate a skill level in programming in C or C++. This skill may be demonstrated by a practical exam or by passing a relevant computer language course.

Course Requirements

The M.S. in Physics for Business Applications degree requires completion of 36 units of course work plus satisfactory submission of a final technical report. The physics requirement is 17 units of courses, including PHYS 516, PHYS 518, PHYS 520, PHYS 558a, PHYS 650 and PHYS 692. The business requirement is 12 units of courses. Business courses may be selected from one of three tracks: Corporate Finance (GSBA 510, GSBA 548 and one of GSBA 518 or GSBA 543 are required with electives chosen from FBE 529, FBE 531, FBE 532 and FBE 562); Information Systems (GSBA 518 or GSBA 543 required with electives chosen from IOM 533, IOM 535, and IOM 540); or Operations Management (GSBA 518 or GSBA 543 required with electives chosen from IOM 525, IOM 537, IOM 581, IOM 582 and IOM 583). Alternative business tracks can be taken with departmental approval. An additional 6 units of technical electives are required, to be chosen from PHYS 408b, PHYS 440, PHYS 504, PHYS 510, PHYS 558b, MATH 407, MATH 408 or CSCI 480. Alternative technical electives can be taken with departmental approval. All required courses must be passed with a grade of B- or better.

Final Technical Report

All students in physics are required to submit a final technical report within one semester of completion of the internship PHYS 692. This report will be reviewed by the department to establish both its technical merit and the quality of written communication skills of the master's student. A grade will be registered for PHYS 692 upon satisfactory review of the final report.

Doctor of Philosophy in Physics

Application deadline: January 1

Admission Requirements

The prerequisite for admission to the doctoral program in the Department of Physics and Astronomy is a bachelor's (or master's) degree in physics or related field. All applicants for admission must take the Graduate Record Examinations, including the Physics Subject Test. Transcripts of undergraduate records as well as

transcripts of any graduate-level courses are required. The TOEFL or IELTS is required of international students applying for a teaching assistantship as well as for those applying for admission only. Applicants may be admitted to the program at the beginning of the fall or spring semester.

Residence

Ph.D. students in physics normally enroll in three courses for each of the first four semesters in graduate school. A total of 60 units of credit is required for graduation. Students admitted to the Ph.D. program may transfer a maximum of 30 units of credit to apply toward degree requirements. For students admitted with Advanced Standing (entry with an appropriate completed graduate degree from an accredited institution), a minimum of 36 units of course work beyond that graduate degree, exclusive of PHYS 794, will be required.

Foreign Language Requirement

There is no foreign language requirement for the Ph.D.

Course Requirements

The student is expected to have prepared for understanding all branches of physics. A minimum of 11 graduate courses in physics, excluding graduate colloquium, dissertation and directed research courses, taken at this university and elsewhere, is required. The required courses for the Ph.D. are PHYS 504, 508ab, PHYS 510, PHYS 518 and PHYS 558ab plus four elective graduate courses in physics. In addition, four units of PHYS 500 and PHYS 794 are required. All required physics courses (except 500 and 794) must be passed with a grade of B- or better. After passing the qualifying examination the student must register for PHYS 794 Doctoral Dissertation each fall and spring semester.

Screening Procedure

Any student proceeding toward the Ph.D. in physics must pass the departmental screening examination at a superior level. The exam must be taken not later than during the second semester (excluding summers, but including time in the M.A./M.S. program) in the department. New advanced students who have passed an equivalent comprehensive examination at a well-recognized research university with superior grades may apply to the departmental examination committee for an oral interview in order to be exempted from the written screening examination. A faculty member who supervises the research of such a student in the department must support this application.

Qualifying Exam Committee

The graduate adviser serves as adviser to incoming students and assists in the appointment of the qualifying exam committee, which is formed after the screening examination has been passed. After the student passes the qualifying examination and a dissertation topic is approved, the five-member qualifying exam committee becomes known as the dissertation committee and is responsible for monitoring the candidate's progress and for approving the final content and form of the dissertation.

Qualifying Examination

The qualifying examination must be attempted not later than during the fifth semester (or in the case of advanced students, the third semester) in the department (excluding summer). The Ph.D. qualifying examination contains a written part and an oral part. The written part consists of a critical review by the student of a published work selected by the qualifying exam committee and of a research proposal prepared by the student on the area in which the student intends to do a doctoral dissertation. The oral part expands on the written part.

Dissertation

A doctoral dissertation in physics is expected to be an extensive description of original research carried out by the student. A complete discussion of reported research in relation to previous work by others is essential.

Defense of the Dissertation

The dissertation must be defended in a final oral examination. The candidate must be prepared to answer general questions in the field as well as specific questions regarding the dissertation.

Courses of Instruction

ASTRONOMY (ASTR)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

ASTR 100Lxg The Universe (4, FaSp) Survey of the universe: planets, satellites, comets, stars, nebulae, galaxies. Practical component includes planetary observations and dark-sky field trip. Not available for major credit.

ASTR 104L Special Laboratory (1, FaSp) Laboratory component for ASTR 100Lxg for transfer students with equivalent lecture credit from another institution. For transfer students only. Graded CR/NC.

ASTR 200Lxg Earth and Space (4) Study of earth as a physical object and an object in space. Topics include seismic events, earth interior, other planets, formation of the sun and earth. Not available for major credit.

ASTR 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

ASTR 400 The Solar System (4, 2 years, Fa) Earth's motions; planets and their satellites; comets; meteorites; interplanetary matter; elementary celestial mechanics. *Prerequisite:* MATH 226.

ASTR 410 Stellar Astronomy (4, 2 years, Sp) The nature and dynamics of the sun, stars, star clusters, interstellar medium, and the structure of our galaxy. *Prerequisite:* MATH 126.

ASTR 420 Galaxies and Cosmology (4, 2 years, Fa) Galaxies and clusters of galaxies: their content, structure, dynamics, distribution, and motions; observational cosmology. *Prerequisite:* PHYS 153L or PHYS 163L.

ASTR 440 Astrophysics (4, 2 years, Sp) Introduction to the theory of stellar structure, stellar atmospheres, the evolution of the sun and stars. *Prerequisite:* PHYS 153L or PHYS 163L.

ASTR 490x Directed Research (1-8, max 12) Individual research and readings. Not available for graduate credit. *Prerequisite:* one upper-division course in astronomy and departmental approval.

ASTR 540 Advanced Cosmology (3) Perturbed Einstein's and Boltzman equations, Universe's content, anisotropies: initial conditions, linear evolution, comparison with observations. *Prerequisite:* PHYS 504, PHYS 508ab, PHYS 510, PHYS 518.

PHYSICS (PHYS)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

PHYS 051x Problem Solving in Mechanics and Thermodynamics (1) Intensive practice in solving elementary problems within a student-centered learning environment. Not available for degree credit. Graded CR/NC. *Concurrent enrollment:* PHYS 151L.

PHYS 100Lxg The Physical World (4, FaSp) The fundamentals of physics presented with emphasis on the structure and beauty of physical laws. Practical component will relate these laws to commonly encountered events. Not available for major credit.

PHYS 125Lg Physics for Architects (4, Sp) Fundamental laws and principles of physics with emphasis on the application of physical principles to the problems of architecture. Lecture, 4 hours; laboratory, 3 hours. (Duplicates credit in PHYS 125L.) *Prerequisite:* MATH 108.

PHYS 135abl Physics for the Life Sciences (4-4, FaSpSm) Fundamental laws and principles of physics emphasizing areas related to life sciences; prerequisite for biological sciences, medicine, dentistry, and pharmacy. Lecture, 4 hours; laboratory, 3 hours. (Duplicates credit in PHYS 125L.) *Prerequisite:* Passing of Math Placement Exam or MATH 108 or MATH 125 or MATH 126 or MATH 226.

PHYS 141L Special Laboratory I (1, FaSpSm) Laboratory component for PHYS 151Lg for transfer students with equivalent lecture credit from another institution. For transfer students immediately after matriculation. Graded CR/NC.

PHYS 142L Special Laboratory II (1, FaSpSm) Laboratory component for PHYS 152L for transfer students with equivalent lecture credit from another institution. For transfer students immediately after matriculation. Graded CR/NC.

PHYS 143L Special Laboratory III (1, FaSpSm) Laboratory component for PHYS 153L for transfer students with equivalent lecture credit from another institution. For transfer students immediately after matriculation. Graded CR/NC.

PHYS 151Lg Fundamentals of Physics I: Mechanics and Thermodynamics (4, FaSpSm) Gateway to the majors and minors in Physics and Astronomy. Statics and dynamics of particles and rigid bodies, conservation principles, gravitation, simple harmonic oscillators, thermodynamics, heat engines, entropy. Lecture, 3 hours; laboratory, 3 hours. *Prerequisite:* MATH 125 or MATH 126 or MATH 226.

PHYS 152L Fundamentals of Physics II: Electricity and Magnetism (4, FaSpSm) Electrostatics, magnetostatics, electrical circuits, wave motion, sound waves, electromagnetic waves. Lecture, 4 hours; laboratory, 3 hours. *Prerequisite:* PHYS 151L, MATH 126; *corequisite:* MATH 226.

PHYS 153L Fundamentals of Physics III: Optics and Modern Physics (4, FaSpSm) Geometrical optics, interference, diffraction, special relativity, quantum mechanics, atomic physics, solid state physics. Lecture, 3 hours; laboratory, 3 hours. *Prerequisite:* PHYS 152L.

PHYS 161L Advanced Principles of Physics I (4, Sp) Gateway to the majors and minors in Physics and Astronomy. Introductory treatment intended for well-qualified students. Dynamics of particles and rigid bodies, conservation laws, wave motion, thermodynamics, heat engines, entropy. Lecture, 3 hours; laboratory, 3 hours. *Prerequisite:* MATH 125; *corequisite:* MATH 126.

PHYS 162L Advanced Principles of Physics II (4, Fa) Electrostatics, magnetostatics, electrical circuits, electrical and magnetic properties of matter, Maxwell's equations, electromagnetic waves, propagation of light. Lecture, 4 hours; laboratory, 3 hours. *Corequisite:* MATH 226; *recommended preparation:* PHYS 161L.

PHYS 163L Advanced Principles of Physics III (4, Sp) Interference and diffraction of waves, special relativity, quantum mechanics, atomic physics, nuclear physics, condensed matter physics, elementary particles. Lecture, 3 hours; laboratory, 3 hours. *Prerequisite:* PHYS 162L.

PHYS 190 Physics Discovery Series (1, Fa) Introduction to current research activities of the faculty of the department; topics of current and popular interest among the wider community of physicists. Graded CR/NC.

PHYS 200Lxg The Physics and Technology of Energy: Keeping the Motor Running (4, FaSp) Investigation of energy technologies, including development and implementation issues. Topics include the industrial revolution, electromagnetic induction, power transmission, combustion engines, fission and fusion. Not available for major credit.

PHYS 304 Mechanics (4, Fa) Dynamics of particles, kinematics of rotations, rigid body motion, Lagrangian and Hamiltonian formalism, theory of small vibrations. *Prerequisite:* PHYS 151L or PHYS 161L, MATH 245.

PHYS 316 Thermodynamics and Statistical Mechanics (4, 2 years, Sp) First, second, and third thermodynamic laws; thermodynamic potentials, applications; distribution laws, kinetic theory, transport phenomena, specific heats. *Prerequisite:* PHYS 152L or PHYS 161L, MATH 226.

PHYS 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

PHYS 408ab Electricity and Magnetism (a: 4, Fa; b: 4, Sp) *a:* Electrostatics; thermal, chemical, magnetic effects of steady currents; DC circuits. *b:* Electromagnetic induction; AC circuits; Maxwell's equations. *Prerequisite:* PHYS 152L or PHYS 162L; *corequisite:* MATH 245 (for PHYS 408a), MATH 445 (for PHYS 408b).

PHYS 438ab Introduction to Quantum Mechanics and its Applications (a: 4, Sp; b: 4, Fa) *a:* Concepts and techniques of quantum mechanics; free and bound states, the hydrogen atom. *b:* Relativity, atomic spectra, quantum statistics, nuclear models, nuclear reactions, elementary particles. *Prerequisite:* PHYS 304; *corequisite:* MATH 445.

PHYS 440 Introduction to Condensed Matter Physics (4, Irregular, Sp) Crystal structures, x-ray diffraction, thermal properties of solids, diamagnetism and paramagnetism, free-electron model of metals, semiconductors, ferromagnetism, superconductivity, imperfections in crystals. *Corequisite:* PHYS 438a.

PHYS 444 Physical Biology: From Molecules to Cells (4, Fa) Length, time, and energy scales of life; statistical mechanics of biomolecules and cellular processes; physics of cell shape; biological fluid dynamics; electron transfer and metabolism. *Prerequisite:* PHYS 152L or PHYS 162L; *recommended preparation:* BISC 220L.

PHYS 472 Introduction to Lasers and Laser Systems (3, Fa) (Enroll in EE 472)

PHYS 473L Lasers and Optics Laboratory (3, Sp) (Enroll in EE 473L)

PHYS 490x Directed Research (1-8, max 12) Individual research and readings. Not available for graduate credit.

PHYS 492L Senior Lab (4, Fa) Projects will include experiments in mechanics, thermodynamics, electricity and magnetism. Emphasis on laboratory work with discussion of theoretical background. Lecture, 2 hours; laboratory, 6 hours. *Prerequisite:* PHYS 152L.

PHYS 493L Advanced Experimental Techniques (4, Sp) Development of modern experimental techniques, including computer interface with data acquisition hardware and data analysis by software, applied specifically to experiments in modern physics. Emphasis on laboratory work with discussion of theoretical background. Lecture, 2 hours; laboratory, 6 hours. *Prerequisite:* PHYS 152L.

PHYS 495 Senior Project (2) An original project will be constructed applying computer technology (in either hardware or software) to produce a result useful in the physics classroom or laboratory.

PHYS 499 Special Topics (2-4, max 4) Lectures and discussions on specialized topics in physics.

PHYS 500 Graduate Colloquium (1, max 4, FaSp) Topics of current research interest in physics and astronomy. Lectures directed to physics graduate students by faculty of the department and by outside speakers. Graded CR/NC.

PHYS 502 Advanced Optics (3, Irregular) Interaction of light and matter; laser oscillation condition; optical resonators; spectroscopy; pumping mechanisms; characteristics of dielectric, semiconductor, gas, and liquid lasers; topics in nonlinear optics.

PHYS 504 Advanced Mechanics (3, Fa) Newtonian formulation of dynamics; Hamilton's principle; Lagrangian formulation; rigid body motion; Hamiltonian formulation; Hamilton-Jacobi theory; vibrations.

PHYS 508ab Advanced Electricity and Magnetism (a: 3, Sp; b: 3, Fa) *a:* Electrostatics, boundary value problems, multipole expansions, microscopic models of matter, magnetostatics. *b:* Maxwell's equations, potentials and gauge transformations; electromagnetic waves; wave guides; electromagnetic radiation; special relativity.

PHYS 510 Methods of Theoretical Physics (3, Fa) Vector analysis; infinite, asymptotic Fourier series; complete sets; Dirac delta function; Fourier, Laplace transforms; Legendre functions; spherical harmonics; Sturm-Liouville theory; orthogonal polynomials; gamma-factorial function; complex variables.

PHYS 514 Methods of Experimental Physics (3, Irregular) Techniques of general utility in contemporary physics research, with emphasis on the use of commercially available instrumentation.

PHYS 516 Methods of Computational Physics (3, Sp) Introduction to algorithm development. Integration of ordinary differential equations; chaotic systems; molecular dynamics; Monte Carlo integration and simulations; cellular automata and other complex systems. *Recommended preparation:* ability to program in C or C++.

PHYS 518 Thermodynamics and Statistical Mechanics (3, Fa) Principles of, and relations between, thermodynamics and statistical mechanics; ensembles, partition function formalism; quantum statistics of non-interacting particles; fluctuations.

PHYS 520 Methods for Complex Systems (3, Fa) Probabilities, random walks, generalized central limit theorems, probabilities in thermodynamics, critical phenomena, self organized criticality, phenomenology of catastrophes, dynamical systems and examples from outside physics.

PHYS 530 Relativity (3, Irregular) Fundamentals of the special theory and applications to classical and quantum physics; the principle of equivalence; tensor analysis and Einstein's theory of gravitation; relativistic cosmology. *Recommended preparation:* PHYS 504a, PHYS 508a.

PHYS 540 Solid State Physics (3, Fa) Fundamental concepts and techniques in solid state physics; electron gas at metallic densities; semiclassical transport; crystallography; band structure; phonons; screening; superconductivity; magnetic ordering. *Recommended preparation:* PHYS 518a, PHYS 558a.

PHYS 558ab Quantum Mechanics (a: 3, Sp; b: 3, Fa) *a:* General formulation of quantum mechanics with applications; theory of measurement; exactly solvable problems; angular momentum formalism. *b:* Approximation schemes and applications to atomic and molecular physics and scattering theory; identical particles; electromagnetic properties of atoms.

PHYS 566 Neural Network Self-Organization (3, Sp) (Enroll in CSCI 566)

PHYS 590 Directed Research (1–12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PHYS 593 Practicum in Teaching the Liberal Arts (2, FaSp) (Enroll in MDA 593)

PHYS 594abz Master's Thesis (2-2-0) Credit on acceptance of thesis. Graded IP/CR/NC.

PHYS 640 Advanced Condensed Matter Physics (3, Sp) Magnetism, magnons; superconductivity; transport phenomena; many-body effects; interacting electron gas; Hartree-Fock theory; neutron and X-ray scattering; and other selected topics. *Recommended preparation:* PHYS 540, PHYS 558b.

PHYS 650 Topics in Current Research (2, Fa) Course content will vary each year. It will include topics of current interest in research conducted in academia and industry.

PHYS 668 Advanced Quantum Mechanics (3, Sp) Relativistic wave equations; second quantization of Klein-Gordon, Dirac and Maxwell fields; applications in quantum electrodynamics and condensed matter physics. *Recommended preparation:* PHYS 558b.

PHYS 669ab Group Theory and Symmetries in Physics (3-3, Irregular) *a:* Abstract group theory; representation theory; point groups; selection rules; crystal tensors; molecular vibrations; rotation group; SU(2); Wigner-Eckart theorem; crystal-field splitting; time-reversal symmetry; gauge invariance; SU(3) and quarks. *b:* Application of group theory in field theory and particle physics: Lie groups and representations, Young tableaux, Dynkin diagrams, Poincare group, classical groups and supergroups, gauge theories. *Recommended preparation:* PHYS 558b.

PHYS 670 High Energy Physics (3, Irregular) Elementary particles and the fundamental forces acting on them. Quarks, leptons, symmetries, gauge invariance, spontaneously broken symmetry, electroweak theory, quantum chromodynamics grand unified theory, strings. *Recommended preparation:* PHYS 668.

PHYS 678 Relativistic Quantum Field Theory (3, Irregular) Computational methods in relativistic quantum field theory: Feynman path integral, covariant perturbation theory, regularization, renormalization group, and non-perturbative techniques. *Recommended preparation:* PHYS 668.

PHYS 680 Advanced Quantum Field Theory (3, Irregular) Renormalization, quantization of gauge theories, non-Abelian gauge theories, quantum chromodynamics, spontaneous symmetry breaking, the standard model, anomalies. *Recommended preparation:* PHYS 678.

PHYS 682 Supersymmetric Field Theory (3, Fa) Supersymmetry algebra, Coleman-Mandula theorem, N=1 and N=2 Yang-Mills theory, Seiberg duality, holomorphy, introduction to Seiberg-Witten theory, electromagnetic duality, BPS states. *Recommended preparation:* PHYS 678, PHYS 680.

PHYS 690 Introduction to Physical Biology (3, Sp) Introduces students to the role of physics in biology. Considers both experimental and more fundamental points of view. Explores a few current research directions. *Recommended preparation:* good knowledge of basic statistical mechanics and thermodynamics.

PHYS 692 Internship (3 or 6, max 6, FaSpSm) Field application of physics in a business or industry setting; part-time employment. Project to be jointly defined by student, employer and professor. Open to M.S. Physics for Business Applications degree candidates only.

PHYS 710 Selected Topics in Experimental Physics (3, max 6) Course content will vary yearly with current interest. Topics covered may include superconducting quantum interference devices, scanning tunneling microscopy, and laser cooling and trapping of single atoms.

PHYS 720 Selected Topics in Theoretical Physics (3, max 6) Course content will vary yearly with current interest. Topics covered may include field theory, many body theory, Green's functions, dispersion theory, and group theory.

PHYS 730 Selected Topics in Particle Physics (3, max 6) Various advanced phases of particle physics. Content will vary yearly; emphasis on superstring theories, advanced topics in quantum gravity, and field theory. *Recommended preparation:* PHYS 678.

PHYS 740 Selected Topics in Condensed Matter Physics (3, max 6) Course content will vary yearly with current interest. Topics covered may include theory of superconductivity, high temperature superconductivity, Green's functions in condensed matter physics, magnetism and transport in disordered metals.

PHYS 750 Off Campus Studies (3, max 9) Course work taken on campus at Caltech as part of the Caltech-USC cross-registration program. Graded CR/NC.

PHYS 790 Research (1–12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PHYS 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC.

Political Science

Von KleinSmid Center 327
(213) 740-6998
FAX: (213) 740-8893
Email: posc@dornsife.usc.edu
dornsife.usc.edu/politicalscience
Chair: Dennis Chong, Ph.D.

Faculty

Rader Family Trustee Chair in Law and Provost
Professor of Law and Political Science: Lee Epstein,
Ph.D.

Provost Professor of Business, Law, and Political
Economy: Mathew D. McCubbins, Ph.D. (*Public Policy*)

Professors: Dennis Chong, Ph.D.; Terry Cooper,
Ph.D. (*Public Policy*); Ann Crigler, Ph.D.*; Richard
H. Dekmejian, Ph.D.; Mary Dudziak, Ph.D. (*Law*);
Susan Estrich, J.D. (*Law*); Philip Ethington, Ph.D.
(*History*); James Ferris, Ph.D. (*Public Policy*); Elizabeth
Garrett, J.D. (*Law*); Howard Gillman, Ph.D.; Elizabeth
Graddy, Ph.D. (*Public Policy*); Thomas Hollihan,
Ph.D. (*Communication*); Jane Junn, Ph.D.; Sharon

Lloyd, Ph.D. (*Philosophy*); Nancy Lutkehaus, Ph.D.
(*Anthropology*); John Matsusaka, Ph.D. (*Finance and
Business Economics*); Dan Mazmanian, Ph.D. (*Public
Policy*); Edward McCaffery, J.D. (*Law*); Glenn Melnick,
Ph.D. (*Public Policy*); Michael B. Preston, Ph.D.*; Robert
Rasmussen, J.D. (*Law*); Alison D. Renteln, Ph.D.*;
Stanley Rosen, Ph.D.*; Eliz Sanasarian, Ph.D.*; Edwin
Smith, J.D. (*Law*); Shui Yan Tang, Ph.D. (*Public Policy*);
Ernest J. Wilson III, Ph.D. (*Communication*); Priscilla
Wohlstetter, Ph.D. (*Education*)

Associate Professors: John E. Barnes, Ph.D.*; Christian Grose, Ph.D.; Ange-Marie Hancock, Ph.D.; Juliet Musso, Ph.D. (*Public Policy*); Leland Saito, Ph.D. (*Sociology*); Jefferey M. Sellers, Ph.D.

Assistant Professors: Diana O'Brien, Ph.D.; Nicholas Weller, Ph.D.

Professor of the Practice: Bill Lockyer, J.D.

Assistant Professors (Teaching): Arthur Auerbach, Ph.D.; Anthony Kammas, Ph.D.; Andrew Manning, Ph.D.

Assistant Professor of the Practice: Daniel Schnur, B.A.

Adjunct Assistant Professors: William Fahey, J.D.; Kerman Maddox, M.P.A.; George Newhouse Jr., J.D.; Olu K. Orange, J.D.; William Simon Jr., J.D.; Darry Sragow, J.D.

Professor Emeritus of Political Science and History and Associates Chair Emeritus in Social Science: Mar Kann, Ph.D.

Emeriti Professors: Carl Q. Christol, Ph.D., LL.B., LL.D. (Hon.); Nora Hamilton, Ph.D.; John R. Schmidhauser, Ph.D.

Emeritus Associate Professor: Joseph L. Nyomarkay, Ph.D.*

*Recipient of university-wide or college teaching award.

The Department of Political Science divides political science into four broad fields: American politics, political thought, comparative politics, and law and public policy. The department offers regional specialization in six areas: Latin America, East Asia, Western Europe, Russia and Eastern Europe, the Middle East, and Africa. The Jesse M. Unruh Institute of Politics provides local internships for students as part of their course work or as independent study (see page 447xx).

Degree Programs

The Department of Political Science offers: the B.A.; minors in political science; law and society; race, ethnicity and politics; human rights; and political organizing in the digital age. The department also offers M.A. and Ph.D. degrees under the jurisdiction of the Graduate School, as well as a dual Ph.D. in Political Science and International Relations/Juris Doctor with the USC Gould School of Law.

Undergraduate Degrees

Advisement

The department has faculty and staff advisers who provide academic advisement, career counseling and advisement to pre-law students and those wishing to go on to graduate studies. All majors are encouraged to see their adviser.

Major Requirements for the Bachelor of Arts in Political Science

Department majors are required to take nine courses (36 units) in political science. At least two of the nine

courses must be selected from the four 100-level core courses: POSC 100 Theory and Practice of American Democracy, POSC 110 Ideology and Political Conflict, POSC 120 Comparative Politics, POSC 130 Law, Politics and Public Policy.

In addition, at least six of the nine courses must be at the 300-level or above, including at least one course in each of the following four fields: American politics, political thought, comparative politics, and law and public policy. No more than one course (or four units) of POSC 395 or POSC 490x may be counted toward the 36 unit departmental requirements.

Students who have a double major in political science and in another department in the social sciences, may, with prior permission of the department undergraduate adviser, substitute one upper-division course from the second major for one upper-division political science course. In the development of an undergraduate program, students should consult periodically with the political science undergraduate adviser and/or with departmental faculty.

Area Specialization

While majoring in political science and fulfilling the department requirements, a student may elect to emphasize a particular regional area in the fields of comparative government, diplomacy and international politics. Regional specializations are offered in six areas: East Asia, Western Europe, Latin America, Middle East, Africa, Russia and Eastern Europe. With the approval of the faculty, a student may organize an academic program in such a way as to fulfill the general education language requirements with the language or languages of the regional area specialization. In addition, it is assumed the student will fulfill other social sciences and humanities requirements and electives with courses focusing on the history and culture of the particular area of specialization. Such a pattern of courses at the undergraduate level will strengthen a student's qualifications for graduate-level area programs, as well as for various forms of foreign service.

Bachelor of Arts, Philosophy, Politics and Law

This interdisciplinary program consists of nine courses chosen from PHIL, POSC, LAW and ANTH. See Philosophy, page 422xx.

Political Science Minor

Students who minor in political science must take five courses, 20 units, in political science. Students can either pursue course work in a traditional subfield (American politics, comparative politics, law and public policy, or political theory) or in a specific issue area of concentration (civil liberties and human rights, race, ethnicity, and gender, urban political problems, Asian politics, etc.).

Those who focus their studies on a traditional subfield must take the lower-level introductory course in that subfield: POSC 100 Theory and Practice of American Democracy (American politics); POSC 110 Ideology and Political Conflict (political theory); POSC 120 Comparative Politics (comparative politics) or POSC 130 Law, Politics and Public Policy (law and public policy).

Students pursuing the minor must also take four upper-division courses, three of which must be in the chosen subfield. Students choose from a predetermined list

of courses divided by subfield in consultation with and approval of the department's undergraduate student adviser.

Those who pursue a specific issue area of concentration are required to take the department's designated gateway course, POSC 120 Comparative Politics, and at least three upper-division courses in the issue area of concentration. A fourth upper-division course must be taken in the issue area of concentration or a complementary area. The upper-division courses are chosen in consultation with and approval of the department's undergraduate student adviser.

Human Rights Minor

The protection of human rights has become a matter of international concern. Despite widespread media coverage of violations, flagrant abuses occur daily throughout the world. The human rights minor provides students with in-depth knowledge about various human rights issues.

Drawing together classes from a range of departments in and outside the USC Dornsife College of Letters, Arts and Sciences, this interdisciplinary minor will cover the theoretical foundations of human rights, historical and current developments, case studies and policies. Students will be required to take their learning outside the classroom through an internship or by teaching human rights in the community and will be encouraged to join relevant student organizations.

Total unit requirements for the minor are 18*. Students take one core course in human rights, POSC 448a The Politics of Peace. In addition, the minor requires two courses dealing with international human rights, one domestic human rights related course and a community involvement experience through the Department of Political Science.

Required Courses (16 units)

POSC 448a

Two international human rights courses selected from: ANTH 330, HIST 456, HIST 365, IR 310, IR 315, IR 316, IR 318, IR 325, POSC 366, POSC 440, POSC 456, PPD 382, REL 335

One domestic human rights course selected from: AMST 348, COMM 412, FREN 370, GERO 435, JOUR 466, POSC 333, POSC 380, POSC 441, POSC 444, PPD 342, PPD 439, SOCI 356, SOCI 360

Community Involvement (2 units)

Students are required to take their learning outside the classroom through an internship with a focus in human rights, teaching human rights in the community or an independent project. Students who choose the internship must enroll in POSC 395 and those who choose to do an independent project must enroll in POSC 490x. Approval is needed to enroll in POSC 395 and POSC 490x.

POSC majors must take four courses (16 units) outside of the Political Science Department for a total of 22 units.

Law and Society Minor

This interdisciplinary program focuses on the effect of law on society as well as the ways in which social forces influence the legal system. The idea is that students

will understand the law if they look beyond “law on the books” to “law in action.” Thus, it is important to study key legal institutions such as the legal profession, the judiciary, juries, the police, legislatures, and administrative agencies. In addition, the minor introduces students to legal policies like plea bargaining and the death penalty, and the constitutional principles that underlie political debates about them, e.g., equal protection, due process and privacy.

The requirements for the minor include seven courses (28 units). All students are required to take POSC 130 Law, Politics, and Public Policy. Three component political science upper-division courses are required, one from each category:

1. *Core* — POSC 130
2. *Constitutional Law* — POSC 340, POSC 426 or POSC 444
3. *International Law* — POSC 345 or POSC 448a
4. *Policy Analysis* — POSC 333, POSC 347, POSC 395, POSC 432, POSC 435, POSC 436, POSC 440, POSC 441, POSC 442, POSC 443, POSC 448b or POSC 452
5. *Humanistic/Historical* — PHIL 340, PHIL 430
6. *Sociology* — SOCI 351 or SOCI 353
7. *Other* — ANTH 345, COMM 421, ECON 434, LAW 200x or PSYC 355

At least four classes must be unique to the minor. Political science majors must take upper-division courses only from categories 5, 6 and 7. Non-political science majors must take at least one upper-division course from 5, 6 or 7.

Race, Ethnicity and Politics Minor

The interdisciplinary minor in race, ethnicity and politics helps students analyze and critically evaluate contemporary race relations and how race matters in politics today.

Requirements: Five Courses (20 Units)*

All students are required to take POSC 421 Ethnic Politics. In addition, students must also take one course from each category: Race and Gender in a Global Context, Comparative Racial Politics, Social/Historical (Racial Perspective) and Racial Formation. The following is a list of courses that fulfill each category.

CORE REQUIREMENT	UNITS
POSC 421 Ethnic Politics	4

POLITICAL SCIENCE UPPER-DIVISION COURSES

	UNITS
Choose one course from each of the groups below:	
<i>Race and Gender in a Global Context:</i>	
POSC 350 Politics of Latin America	4
POSC 351 Middle East Politics	4
POSC 352 Politics of Southeast Asia	4
POSC 354 Japanese Politics	4
POSC 356 Politics in the People's Republic of China	4
POSC 358 Politics of Sub-Sahara Africa	4
POSC 430 Political Economy of Mexico	4
POSC 431 Political Economy of Central America	4
POSC 452 Critical Issues in Law and Public Policy	4

POSC 456 Women in International Development	4
POSC 464 Politics of Russia and Eastern Europe	4

Comparative Racial Politics:

POSC 320 Urban Politics	4
POSC 328 Asian American Politics	4
POSC 424 Political Participation and American Diversity	4
POSC 427 Black Politics in the American Political System	4
POSC 428 Latino Politics	4
POSC 441 Cultural Diversity and the Law	4
POSC 442 The Politics of Human Differences: Diversity and Discrimination	4
POSC 444 Civil and Political Rights and Liberties	4

ELECTIVES

Choose one course from each of the groups below:

Social/Historical:

HIST 265 Understanding Race and Sex Historically	4
HIST 318 Early American Indian History	4
HIST 341 American Social History	4
HIST 347 Urbanization in the American Experience	4
HIST 357 The New South	4
SOCI 142 Diversity and Racial Conflict	4
SOCI 155 Immigrant America	4
SOCI 342 Race Relations	4
SOCI 432 Racial and Ethnic Relations in a Global Society	4

Racial Formation:

AMST 301 America, the Frontier, and the New West	4
AMST 320 Social Construction of Race and Citizenship	4
AMST 365 Leadership in the Community — Internship	4
AMST 385 African American Culture and Society	4

*Political science majors are required to take seven courses (28 units).

Political science majors must take four courses (at least three must be upper-division) from the Social/Historical and the Racial Formation categories. At least four classes must be unique to the minor and not taken for additional major, minor or general education credit.

Political Organizing in the Digital Age Minor

The digital environment is changing the face of political organization, both in domestic American electoral politics and in the methods used by transnational social movements to call attention to problems around the globe. Howard Dean's use of the Internet to fund his 2004 presidential campaign has made other candidates aware of the political power of the Web in fundraising and grass-roots orchestration of local (and “global”) events.

This minor should be of interest to students majoring in international relations, political science or other

programs who plan to use technology to affect contemporary national and international affairs. As with all minors, students must choose four courses dedicated exclusively to this minor and four courses outside their major departments. These may, but need not be, the same four courses.

This minor is intended to help students engage in domestic and international political organizing by creating Websites, podcasting and using other new technologies. It should help students secure internships and jobs with political and international organizations, and generally improve their abilities to change the world.

COURSE REQUIREMENTS

Choose one class from each of the following five lists:

I. Domestic Political Organizing:

POSC 315 Regulation of Elections and Political Finance	4
POSC 335 Political Parties, Campaigns, and Elections	4
POSC 422 Political Attitudes and Behavior	4
POSC 424 Political Participation and American Diversity	4
POSC 437 Mass Media and Politics	4

II. Transnational Social Movements:

IR 305 Managing New Global Challenges	4
IR 306 International Organizations	4
IR 324 Multinational Enterprises and World Politics	4
IR 371 Global Civil Society: Non-State Actors in World Politics	4

III. New Technologies in Organizing:

ITP 304 Technologies for Building Online Political Campaigns	4
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IV. The Context of Political Organizing:

COMM 321 Communication in the Virtual Group	4
COMM 489 Campaign Communication	4
IR 308 Globalization: Issues and Controversies	4
IR 325 Rich and Poor States in the World Political Economy	4
IR 330 Politics of the World Economy	4
IR 444 Issues and Theories in Global Society	4
POSC 300 Principles, Institutions, and Great Issues of American Democracy	4
POSC 345 International Law	4
POSC 371 The Non-profit Sector and the Public Interest	4
POSC 427 Black Politics in the American Political System	4
POSC 428 Latino Politics	4
POSC 451 Politics of Resources and Development	4
POSC 456 Women in International Development	4
PPD 372 Public Service in an Urban Setting	4

V. Capstone Class:

The capstone class allows students to engage more deeply in one of the contributing areas of study.

COMM 487	Communication and Global Organizations	4
IR 327	International Negotiation	4
ITP 413x	Interactive Web Development	4
POSC 395	Directed Governmental and Political Leadership Internship	4

Total: Five courses, 20 units

Interdisciplinary Russian Area Studies Minor

See the Department of Slavic Languages and Literatures, page 466xx.

Critical Approaches to Leadership Minor

See the Department of Interdisciplinary Studies, page 375xx.

Political Science Honors Program

The department offers an honors program for outstanding undergraduate students in the junior and senior years. The two semester program emphasizes a specialized topic (a different area each year) in political science. The organization of the course during the first semester follows the seminar model, emphasizing independent research, discussion, and oral and written reports. In the second semester, the student is required to write a thesis under the direction of a faculty member. Students are admitted to the program after careful screening on the basis of their academic record and a personal interview. Classes are limited to about 10 students.

The department also offers an honors sequence for freshmen and sophomores, POSC 190ab. The first semester is a small seminar of about 10 students. The second semester is a continuation with a major research paper due as the final.

Political Science Honor Societies

There are two honor societies of special interest to political science majors. Pi Sigma Alpha stimulates scholarship and interest in the subject of government by providing tangible recognition to students who have excelled in the field. Political science majors are eligible to join after successful completion of at least three upper-division courses in political science. An overall grade point average of 3.5 or higher is required, with a minimum of 3.5 in all political science classes.

The second honor society is Blackstonians. This is a pre-law honor society for undergraduate students designed to recognize academic excellence, assist the student in his or her preparation for law school, and expand the knowledge of the legal profession. Membership is restricted to students who have completed at least 32 units (16 of which must be from USC), but not more than 118 units, and have maintained at least a 3.5 grade point average.

Mock Trial Team

The department hosts the USC Mock Trial Team. This trial advocacy training program is designed to develop students' knowledge of substantive areas of civil law, criminal law and evidence. Additionally, public speaking skills are honed and societal mores are explored. Legal concepts, sociocultural theory and presentational skills

are then applied through participation in courtroom advocacy competitions nationwide and local public interest advocacy assignments. Academic credit is earned through POSC 398. Membership on the team is required to enroll.

Graduate Degrees**Degree Requirements**

These degrees are under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue (page 97xx) for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School.

All graduate students are required to maintain regular contact with the graduate coordinator to assure compliance with departmental regulations.

Master of Arts in Political Science and International Relations

Only students who have a degree objective of obtaining the Ph.D. will be admitted into the Political Science and International Relations program. However, interested students can obtain a M.A. degree while pursuing the Ph.D. The degree is awarded upon successful completion of (a) 28 units, including three of the five courses in the program's core theory and methodology sequence, a master's thesis and registration in POSC 594ab or IR 594ab; and (b) the approval of the master's thesis by the thesis committee.

Juris Doctor/Doctor of Philosophy in Political Science and International Relations

Application deadline (for Ph.D.): December 1

The Political Science and International Relations program and the USC Gould School of Law jointly offer a dual degree program leading to the J.D./Ph.D. degree. Applicants must apply to the Political Science and International Relations program and the law school and meet the requirements for admission to both. In addition to the LSAT, students interested in this program are required to take the Graduate Record Examinations (GRE).

In the first year students take their course work in the law school exclusively. To earn the J.D., all students (including dual degree students) must complete 35 numerically graded law units at USC after the first year. The associate dean may make exceptions to this rule for students enrolled in law honors programs. The second and third years include a total of 40 units of courses in political science and international relations and 40 units of law. Students must complete a five-course core theory and methodology sequence. They must include a classics-oriented, two-semester political, social, comparative and international theory sequence (currently POSC 530 and IR 500), a multivariate statistics course (such as IR 514 or POSC 600) and a philosophies/methodologies in social inquiry course (IR 513 or POSC 500). Finally in their second, third or fourth year, they must take an approved advanced research methods course.

To obtain a Ph.D. in Political Science and International Relations, students must pass the screening process. After the completion of required field course

work with a grade of B or better, a substantive paper or USC M.A. thesis relevant to the program, students must take a Ph.D. qualifying examination in two of their three fields of concentration. The third field will be completed by taking at least three courses and passing each with a grade of B or better. The final requirement, following successful completion of the qualifying examination, is a doctoral dissertation.

Courses of Instruction**POLITICAL SCIENCE (POSC)**

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

POSC 100 Theory and Practice of American Democracy (4) Theoretical, institutional, and functional aspects of American national, state, and local government and politics; contemporary issues. Recommended for freshmen and sophomores.

POSC 110 Ideology and Political Conflict (4) Modern political ideologies; their assumptions, perceptions, and prescriptions regarding political stability and social injustice: anarchism, communism, socialism, liberalism, conservatism, and fascism.

POSC 120 Comparative Politics (4) Gateway to the major in political science. Comparative analysis of political institutions and processes in selected industrial, developing and socialist countries, in terms of contrasting ideologies, parties, elites, and economies.

POSC 130g Law, Politics and Public Policy (4) Interaction between law and politics; overview of the American legal system; value conflicts and public policy questions which arise within it. *Concurrent enrollment:* WRIT 140.

POSC 165g Modern Times (4) Explores the current major social and political issues that confront scholars, leaders, and citizens in today's modern world. *Concurrent enrollment:* WRIT 140.

POSC 190ab Politics and Society (4-4) a: Honors seminar for freshmen and sophomores. b: Continuation of work begun in first semester. Open only to freshman and sophomore Political Science majors only.

POSC 201x Law and Politics: Electing a President (4) (Enroll in LAW 201x)

POSC 210gm Social Issues in Gender (4) (Enroll in SWMS 210gm)

POSC 220g Critical Issues in American Politics (4) Examination of enduring political issues, as well as the political processes and institutions. *Concurrent enrollment:* WRIT 140.

POSC 248g International Human Rights (4, FaSpSm)

Overview of human rights controversies across the globe. Introduction to techniques of analysis for social issues, interdisciplinary research methods, and interpretation of complex political problems.

POSC 250 Critical Issues in Comparative Politics (4)

Critical analysis of major issues in comparative politics such as dependency, crises in political legitimacy, political violence and terrorism, political corruption, genocide, and comparative revolutions.

POSC 255g Cultures, Civilizations and Ethnicities in World Politics (4)

Theories and case studies of conflict and coexistence between cultures, civilizations and ethnic groups in the context of the countervailing force of Western socio-economic globalization.

POSC 260 Global Ethnic Politics (4)

A comparative analysis of multi-ethnic societies through case studies of inter-ethnic conflict and coexistence, conflict resolution, prevention of genocide and defense of human rights.

POSC 265g Environmental Challenges (4, Fa)

Examination of the challenges of environmental problem-solving at the personal, local, national and global scales, focused on the issue of climate change.

POSC 270 Introduction to Environmental Law and Politics (4, Sp)

Overview of environmental policy, law and politics at the international, domestic and local levels. Social science gateway to the environmental studies major. (Duplicates credit in POSC 347.) *Prerequisite:* ENST 100.

POSC 300 Principles, Institutions, and Great Issues of American Democracy (4)

Underlying principles of American democracy; major issues of contemporary public policy in national and state institutions.

POSC 311 Political Analysis (4)

Methodological and theoretical problems of micro-analytic studies in political science. Techniques of data collection and assimilation.

POSC 315 Regulation of Elections and Political Finance (4)

The role money plays in elections and public decisions: disclosure requirements, limits on campaign contributions and expenditures, regulation of radio/television time, tax incentives, public funding.

POSC 320 Urban Politics (4)

Evolution of contemporary institutions; differing views of community power; major policies; state and federal relations to local governments; metropolitan community problems.

POSC 321 Urban Political Problems (4)

Social problems and governmental policy in the urban environment, emphasizing such problem areas as education, environment, race, police and the system of criminal justice, and poverty.

POSC 322 Social Construction of Race and Citizenship (4, FaSp)

(Enroll in AMST 320)

POSC 323 Applied Politics: Civic Engagement and Leadership (4, Sp)

Provides students with the knowledge and skills necessary to become active in politics based on understanding the history, theory, and practices of public participation.

POSC 325 State Politics (4)

American state politics from a comparative perspective. Examines political processes, differing policy outcomes and the impact of social change on system performance.

POSC 328 Asian American Politics (4, FaSp)

Examines political attitudes, behavior and participation of Asian Americans in diverse U.S. society.

POSC 333 Stigma and Society: Physical Disability in America (4)

Political activity involving disabled persons; development of public policy regarding disabled citizens. (Duplicates credit in former POSC 233.)

POSC 334 Interest Groups and Elite Behavior (4)

Introduction to interest group and elite views of the American system, including recent interest group theory and findings and the general critiques of power distribution in American society.

POSC 335 Political Parties, Campaigns, and Elections (4)

Organization and function of political parties, nominations and elections, strategy and tactics of campaigning, professional candidate management finance, political machines, voting behavior.

POSC 340 Constitutional Law (4)

Development of constitutional law by the courts; leading cases bearing on major constitutional issues; the federal system; powers of government; civil liberties.

POSC 345 International Law (4)

Nature, origin, and development of international law; basic principles analyzed and illustrated with cases.

POSC 347 Environmental Law (4)

Introduces students to central concepts and theories in environmental law and regulation; analyzes present environmental laws and regulations.

POSC 349 Women and the Law (4, Fa)

(Enroll in SWMS 349)

POSC 350 Politics of Latin America (4)

Theories of development and nation-building; revolutionary and evolutionary modernization; role of history, culture, socioeconomic conditions in affecting political structures and functions.

POSC 351 Middle East Politics (4)

Political development in the Middle East, emphasizing historical, cultural, and socioeconomic conditions affecting political structures and functions; modernization and countervailing social, economic, and religious forces.

POSC 352 Politics of Southeast Asia (4)

Theories of development and nation-building; revolutionary and evolutionary modernization; role of history, culture, socioeconomic conditions in affecting political structures and functions.

POSC 354 Japanese Politics (4)

Contemporary Japanese politics, political economy, and political processes. How political systems are organized; roles of bureaucrats, politicians, interest groups, and social activists in policymaking. *Recommended preparation:* POSC 120.

POSC 355 Politics of East Asia (4)

Institutions and processes of advanced societies; political culture, interest articulation and aggregation, the governmental process.

POSC 356 Politics in the People's Republic of China (4)

The Chinese revolution; social, political, and economic developments in post-1949 China; China after Mao Zedong (Mao Tse-tung).

POSC 358 Politics of Sub-Sahara Africa (4)

Theories of development and nation-building; revolutionary and evolutionary modernization; role of history, culture, socioeconomic conditions in affecting political structures and functions.

POSC 360 Politics of Anglo-American Political Systems (4)

Institutions and processes of advanced societies; political culture, interest articulation and aggregation, the governmental process.

POSC 363 Cities and Regions in World Politics (4)

Cities and the rise of states; globalization and localization; federalism and decentralization; comparative politics of urban regions in developed and developing countries. *Recommended preparation:* comparative or urban politics.

POSC 365 World Political Leadership (4)

Comparative analysis of theories of power and leadership; application to leaders from western democracies, Third World, and socialist countries. Societal consequences of their policies.

POSC 366 Terrorism and Genocide (4)

Comparative analysis of the determinants of political violence, terrorism, and genocide and their social and moral consequences; application of theories to contemporary case studies.

POSC 370 European Political Thought I (4)

Basic concepts of Western political thought from Plato through the contract theorists.

POSC 371 European Political Thought II (4)

Western political thought since the French Revolution. Rise of Marxist socialism, communism, anarchism, fascism, National Socialism, other doctrines; the democratic tradition; new theories of the state.

POSC 374 The American Founders: Visions, Values and Legacy (4)

Analysis of the political thought of the American Founders; consideration of alternative visions of patriarchalism, republicanism, and liberal democracy; exploration of Founders' core values and their impact on issues of race, class, and gender.

POSC 375 American Political Thought (4) Historical and topical review of American political philosophy from the Puritans to the present. Special emphasis on such recurrent themes as equality, democracy, and racism.

POSC 377 Asian Political Thought (4) Major systems of political thought in Chinese, Japanese, and other Asian cultural traditions. Confucianism, Buddhism, Islam, and other classical systems and their present-day adaptations under the impact of communism and democracy.

POSC 380 Political Theories and Social Reform (2 or 4) Political theories and philosophies in modern times and their relation to public policy and social reform.

POSC 381 Sex, Power, and Politics (4) An evaluation of the ways in which different ideologies, institutions, and policies contribute to differences in political power between men and women.

POSC 385 Population, Society, and Aging (4) (Enroll in SOCI 385)

POSC 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

POSC 391 Honors I: Undergraduate Seminar (4, Fa) Selected topics in designated area of political science. Discussion of readings and presentation of papers.

POSC 392 Honors II: Undergraduate Thesis (4, Sp) Thesis written under supervision, based on research begun in Honors I.

POSC 395 Directed Governmental and Political Leadership Internship (2-8, max 8) Intensive experience in governmental and political offices. Minimum time requirement; evaluation by office and intern report required. Permission of the Director of the Institute of Politics and Government required.

POSC 398L Trial Advocacy: Theory and Practice (1, 2, 4, max 8, FaSp) Course covering substantive law, evidence, public speaking and use of societal mores in courtroom advocacy. Open only to Mock Trial team members.

POSC 420 Practicum in the American Political Process (4) Fieldwork in governmental institutions and processes.

POSC 421 Ethnic Politics (4) Analysis of the political behavior and roles of ethnic and racial groups in the American political system; public policy issues and patterns of political action are examined.

POSC 422 Political Attitudes and Behavior (4) The citizen's political world; political socialization, opinion formation and dissemination; development of political cultures and subcultures; political mobilization; personality and politics.

POSC 423 Presidents and the Presidency (4) Presidential coalition; sources of presidential power; recent leadership styles; decision-making within the presidency.

POSC 424m Political Participation and American Diversity (4, Fa) Examines how diverse groups in the U.S. interact with the American political system.

POSC 425 Legislative Process (4) Individual behavior and decision-making within legislatures; changing executive-legislative functions; legislative functions; relationships to political systems in comparative perspective.

POSC 426 The United States Supreme Court (4) Role of the court in American politics; overview of major decisions; the politics of appointment; the process of decision-making; impact of judicial decisions. *Recommended preparation:* POSC 130.

POSC 427 Black Politics in the American Political System (4) The effects of the organization of the American political system and its operations on blacks and other minorities.

POSC 428 Latino Politics (4, Fa) Analysis of the historic and contemporary roles of Latinos in the American political system; patterns of political participation and representation are examined.

POSC 430 Political Economy of Mexico (4) Examination of contemporary Mexico: the role of the state in the Mexican economy; development of the government party and opposition groups.

POSC 431 Political Economy of Central America (4) Focus on economic, social, and political structures and processes in the region and in specific countries, especially Guatemala, El Salvador, and Nicaragua.

POSC 432 The Politics of Local Criminal Justice (4) Roles and behavior of major legal and political participants in the criminal justice system including the police, the legal profession, judges, and the public.

POSC 435 Politics and the Economy (4) Major techniques, politics, and values involved in the allocation of social and economic resources. Includes such topics as determination of priorities in budgetary processes, economic regulation, control of environmental change, and policies for science.

POSC 436 Environmental Politics (4) The political realities of selected environmental issues; resolving and implementing social priorities; interests, attitudes, strategies, and tactics of pressure groups; institutional biases and opportunities.

POSC 437 Mass Media and Politics (4) Analysis of political content of mass media. Audience response to alternative sources of political information. Consideration of the institutional and economic as well as political aspects of the mass media.

POSC 439 Critical Issues in American Politics (4) Intensive examination of critical issues of particular interest in the field of American politics.

POSC 440 Comparative Law and the Judicial Process (4) Analysis of courts in comparative perspective; judicial decision-making and development of public policy through the judicial process; theories of law and jurisprudence. *Recommended preparation:* POSC 340.

POSC 441m Cultural Diversity and the Law (4) Jurisprudential approach to the study of cultural differences. Consideration of circumstances under which law should accommodate cultural diversity in the United States and abroad.

POSC 442m The Politics of Human Differences: Diversity and Discrimination (4) A comparative perspective on social and cultural forces that affect American laws and policies concerning discrimination on the basis of race or ethnicity, gender, sexual orientation, age, and disability.

POSC 443 Law in Film (4) Analysis of the depiction of law in film; use of film to explore topics in jurisprudence and the politics of law and courts. *Recommended preparation:* POSC 130.

POSC 444 Civil and Political Rights and Liberties (4) An examination of debates and controversies surrounding the nature and scope of civil rights and civil liberties. *Recommended preparation:* POSC 340 or POSC 440.

POSC 448ab The Politics of Peace (4-4) Issues of social justice, large-scale social change, high technology, impacts on human survival, and uses of national and international institutions. *a:* Human rights. *b:* Arms limitation, control, and disarmament.

POSC 449 Political Psychology (4) Psychological forces shaping politics and persons, processes and interactions; emphasis on political socialization and cognitive and affective orientations to politics.

POSC 450 Political Development (4) Choice of models in nation-building; party and other means of mass mobilization; elite recruitment and differentiation; peculiarities of cultures and subcultures; integration of ethnic and other minorities; political socialization and secularization; legitimization.

POSC 451 Politics of Resources and Development (4) Comparison of relationships between rich and poor countries involving political and economic resources and prospects for development; impact on industrialized states; interdependence; new international economic order.

POSC 452 Critical Issues in Law and Public Policy (4) Intensive examination of special topics in the field of law and public policy.

POSC 453 Political Change in Asia (4) Modernization and political development in China and Japan; Asia's economic "miracles" (Taiwan, Japan, Korea, etc.); nationalism and communist movements in East and South-east Asia.

POSC 456 Women in International Development (4)

How various developmental theories analyze the role of women as producers and how Third World women are increasing their role in development.

POSC 463 European Politics (4)

Institutions, cultures and politics of western Europe, eastern Europe and Russia; internationalization; historical and contemporary political, economic, and social change.

POSC 464 Politics of Russia and Eastern Europe (4)

Culture, society, and politics in Russia and in Eastern Europe. Contemporary political institutions and processes.

POSC 469 Critical Issues in Comparative Politics (4)

Intensive examination of critical issues of particular interest in the field of comparative politics.

POSC 476 Contemporary Political Thought (4)

20th century political philosophy dealing with major movements in psychological, existential, socialist, and nationalist thought as they bear upon the crisis of political authority in our time.

POSC 479 Critical Issues in Political Thought (4)

Intensive examination of critical issues of particular interest in the field of political thought.

POSC 490x Directed Research (1–8, max 12)

Individual research and readings. Not available for graduate credit.

POSC 499 Special Topics (2–4, max 8)**POSC 500 Methods of Political Science (4)**

Empirical political research: social science logic; theory construction; measurement; research design; sampling; data generation; secondary analysis; report and proposal writing; research ethics.

POSC 512 Linkage Politics (4)

Empirical and theoretical investigations of the points at which subnational, national, and international politics converge, overlap, or are otherwise interdependent.

POSC 519 Field Research Methods in Comparative Politics and International Studies (4)

(Enroll in IR 519)

POSC 525 Cities, Regions and Global Society (4)

Comparative and historical examination of cities and regions as political settings, as elements of states and international relations, and as sites of transnational economic and social change.

POSC 535 Seminar in North African and Middle Eastern Politics (4)

Comparative and area study approaches, nation-building; political cultures; mobilization of human and natural resources; political recruitment, integration, socialization, and conflict.

POSC 539 Political Economy and Public Policy (4)

(Enroll in PEPP 539)

POSC 540 Law and Public Policy (4)

National and comparative approaches to law and politics in organized societies; law as a policy science; administration of justice; political forces influencing legal change.

POSC 545 Critical Issues in Politics and Policy (4, Fa)

Selected topics in politics and policy; focus on current issues shaping the U.S. and the world.

POSC 546 Seminar in Environmental Policy (4)

Issues and theories involved in the formulation, implementation, and effectiveness of different environmental policies.

POSC 554 Women in Global Perspective (4)

(Enroll in SWMS 554)

POSC 556 Seminar in Disability and Rehabilitation Policy (4)

Examination of physical disability as a policy issue from a cross-national and multidisciplinary perspective; attitudes toward disability; income maintenance, health care, and related programs.

POSC 560 Feminist Theory (4)

(Enroll in SWMS 560)

POSC 590 Directed Research (1–12)

Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

POSC 593 Practicum in Teaching the Liberal Arts (2, FaSp)

(Enroll in MDA 593)

POSC 594abz Master's Thesis (2-2-0)

Credit on acceptance of thesis. Graded IP/CR/NC.

POSC 599 Special Topics (2, 4, 8, max 8, FaSpSm)

Subjects in one or more fields in Political Science.

POSC 600 Seminar in Advanced Research Methods (4)

Multivariate analysis of data, computer applications, and research report preparation; multiple regression; analysis of variance; factor analysis and related techniques; time series analysis. *Prerequisite:* POSC 500.

POSC 610 Seminar in Political Parties (4)

Parties and the political system; formal and informal organization and roles; comparative party systems.

POSC 611 Seminar in the Executive and Legislative Processes (4)

Selected research topics; comparative analyses.

POSC 612 Seminar in Urban Politics (4)

Problems of government and politics in urban, county, and metropolitan areas. Comparative community politics.

POSC 618 Seminar in Problems of American Politics (4)

Theoretical and methodological problems in American politics with emphasis on emerging research paradigms.

POSC 619 Seminar in Supreme Court Politics (4)

Role of the Supreme Court in the American political system. Influences on judicial decision making; appointment and decision making processes; scope of judicial power. *Recommended preparation:* POSC 540.

POSC 621 Seminar in Public Law (4)

Problems and research in American constitutional and administrative law and in modern jurisprudence.

POSC 622 Seminar in Political Attitudes and Behavior (4)

Determinants, nature, and consequences of political attitudes and behavior exploring psychological-sociological models, political socialization and learning, and factors affecting trends in attitudes and behavior.

POSC 623 Seminar in American Constitutional Development (4)

Evolution of American constitutional law; the influence of social, economic, and political changes on constitutional interpretation. *Prerequisite:* POSC 510 or POSC 540.

POSC 624 Seminar in American Constitutional Law and Theory (4)

Contemporary debates and research on the nature of constitutional interpretation, separation of powers, federalism, civil and political rights and liberties.

POSC 630 Seminar in European Politics (4)

Selected research topics in comparative European politics; political culture, socialization, parties, legislative and executive processes.

POSC 632 Seminar in Latin-American Politics (4)

Comparative analysis of the political structure and institutions of Latin America; participation and alienation; democracies and dictatorships; political forces.

POSC 633 Seminar in East Asian Politics (4)

Comparative analysis of revolutionary and evolutionary modernization; the roots of political thought and behavior; peripheral area relationships; present-day political processes.

POSC 634 Seminar in Southeast Asian Politics (4)

Comparative analysis of political forces, ideologies, processes, and institutions.

POSC 636 Seminar in African Politics (4)

Comparative analysis of political forces, ideologies, and institutions in African nations south of the Sahara.

POSC 637 Seminar in Chinese Politics (4)

Guided research and discussion on the governmental process in the People's Republic of China including leadership, ideology, and popular participation.

POSC 640 Seminar in Problems of Comparative Politics (4)

Theoretical and methodological problems in comparative politics; approaches to comparative analysis; problems and trends.

POSC 641 Seminar in Comparative Judicial Policies, Processes, and Behavior (4)

Cross-national and intranational comparative analysis of judicial policies and processes; legal and judicial elites.

POSC 648 International Human Rights Law and Policy (4) Historical and contemporary consideration of human rights issues in world politics. Examination of the philosophical foundations of human rights and the institutions that enforce international standards.

POSC 650 Seminar in Western Political Philosophy (4) Research and special problems.

POSC 651 Seminar in Non-Western Political Philosophy (4) Research and special problems.

POSC 652 Seminar in American Political Philosophy (4) Research and special problems.

POSC 660 Seminar in Problems of Contemporary Political Thought (4) Research and special problems.

POSC 670 Seminar in International Law (4) Topics and cases illustrating general principles and problems. Special research.

POSC 695 Social Science Theory (4) Philosophic foundations of social science, empirical theories current in social science; the relationship between empirical theory and social research.

POSC 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

POSC 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC.

Political Science and International Relations

Von KleinSmid Center 327

(213) 740-1695

FAX: (213) 740-0281

Email: skatada@usc.edu

dornsife.usc.edu/poir

Director: Saori N. Katada, Ph.D.

Doctor of Philosophy in Political Science and International Relations

USC Graduate School Requirements

The Ph.D. degree is awarded to students who have demonstrated in-depth knowledge of the disciplines of political science and international relations and the ability to make an original research contribution. The Ph.D. in Political Science and International Relations requirements are fulfilled by successfully completing a minimum of 70 units beyond the B.A., the Ph.D. screening process, three fields of concentration, a substantive paper, a foreign language requirement (if applicable), qualifying examinations, a dissertation proposal, and a written dissertation and its oral defense.

Admissions

The faculty of the Department of Political Science and the School of International Relations welcome talented candidates from a variety of backgrounds. Although a prior degree in political science or international relations is not necessary, it is strongly recommended that applicants have completed at least some course work in related fields, including political theory, statistics and social science research methods.

Admission decisions are based on consideration of applicants' prior academic performance, as reflected in course grades, the results of the Graduate Record Examination, letters of recommendation, and a statement of intent that demonstrates a seriousness of purpose, a high level of motivation and a desire to benefit from our faculty's areas of expertise or interest. Applicants also are required to submit a sample of their written work in English, preferably a research-oriented paper. Business, government and other practical experiences may also be taken into account. Applicants whose native language is not English must take the TOEFL or IELTS examination.

Screening Process

Before completion of 24 units, students will be reviewed by a screening committee made up of the program director, one teacher of one of the core courses and one professor nominated by the student. This committee

will review the student's progress, including grades and written faculty evaluations of course work.

The committee will be responsible for deciding, at an early stage in the student's career, if the student is likely to finish the Ph.D. program. After reviewing the student's record, the committee may decide to (1) continue the student, (2) not continue the student and admit the student into a terminal M.A. degree program, or (3) fail the student's performance in the screening process, i.e., not continue the student in either the M.A. or Ph.D. programs.

Course Requirements

All doctoral candidates must complete an approved sequence of four courses in core theory and methodology, including a classics-oriented course in political theory, a multivariate statistics course, a philosophies/methodologies of social inquiry course, and a course in advanced research methods.

The selection of additional courses should be guided by the distribution requirements of the Ph.D. program. The student will choose three fields of concentration, of which two will be examined fields. Each examined field of concentration requires completion of four graduate-level courses, including the core course in standard fields, with an average grade consistent with university and program requirements. The third non-examined field of concentration requires completion of three graduate-level courses with an average grade consistent with university and program requirements. Students are also advised to take an independent study course to work towards their substantive paper requirement. Additional courses necessary to complete the 70 units required by the *Guidelines for Graduate Study in Political Science and International Relations* should be taken in consultation with faculty advisers.

Fields of Concentration

The standing fields of concentration include: American politics; comparative politics; international political economy; and international security and foreign policy. The candidate must satisfy two of these four standing fields by passing a written field qualifying examination. The student may satisfy the third field by completing four courses in one of these four, or may propose another customized field of study to be approved by relevant faculty and the Ph.D. program director and steering committee. For example, students can design a third field that cuts across disciplinary boundaries or focuses on specific areas of political science and international

relations beyond the standing fields. The guidelines and program director can provide illustrations of this type of third field.

Foreign Language

The student is required to demonstrate intermediate proficiency in a language other than English if the student's primary field requires it. Students should consult the guidelines and the program director.

Substantive Paper

To show evidence of the capacity to conduct original research and before taking the qualifying exam, each student will submit a substantive paper. The student will submit the draft of his or her substantive paper to the chair of the qualifying exam committee one month prior to the qualifying examinations. After consultation with the chair and necessary revisions, the student is to distribute the paper to all member of the qualifying exam committee at least 14 days prior to the oral defense. The substantive paper should be presented and defended in the oral component of the qualifying examination as a viable journal submission to a peer-reviewed professional journal. It is strongly encouraged that the paper should be submitted to a professional journal approved by the student's adviser within one year of the defense.

Qualifying Examinations

Ordinarily, students will take the qualifying exams no later than the fifth semester in the Ph.D. program. Students will be examined in two of their three fields of concentration. The third field will be completed by taking at least four courses and passing them with an average grade consistent with university and program requirements. The qualifying exam committee will evaluate the quality of these two written exams as evidence of the capacity to define and complete a Ph.D. dissertation.

The written examinations are closed book and will be administered over two days at least once per academic year. Examination questions will be written by a committee of the tenure track faculty in each field. The director of POIR graduate studies (program director), in consultation with the chair of the Department of Political Science and the director of the School of International Relations, will appoint one faculty member from each field to coordinate the writing of the relevant field exam. The field exam coordinators will then seek assistance from other faculty in their field, including those with whom the student has studied, to compose the written examination questions.

The oral portion of the student's qualifying examination will be administered by his or her qualifying exam committee. The oral examination will be based on the student's two written field exams and the substantive paper. The qualifying exam committee will be made up of five members. In consultation with his or her principal adviser, the student will select two members, one from each standing field in which he or she will be examined, and the other two field examiners and the outside member of the qualifying exam committee. Final approval of the qualifying exam committee requires the signature of the program director.

Students will pass the qualifying examinations if no more than one member of the committee dissents after reviewing the student's record at USC and performance on the written and oral parts of the qualifying exams. At the discretion of the qualifying exam committee, students who do not pass the exams may be allowed to retake the qualifying exams the next time they are offered. Students are admitted to candidacy for the Ph.D. when they have completed the university residency requirement, passed the written and oral portions of the Ph.D. qualifying examinations, and defended their dissertation proposal.

Dissertation

Upon completion of the qualifying examinations, the student, in consultation with the principal adviser, selects a dissertation committee in accordance with university rules. Within six months of completing the qualifying examinations, students should have a formal defense of the dissertation proposal before their dissertation committee. The Ph.D. is earned upon the submission of the written dissertation and its successful defense before the dissertation committee.

Consult the Requirements for Graduation section (page 86xx) and the Graduate School section (page 97xx) of this catalogue regarding time limitations for completion of the degree and other Graduate School requirements.

All graduate students considering an academic career should generally have research, teaching and advisement experiences as part of their program of study.

Courses of Instruction

POLITICAL SCIENCE AND INTERNATIONAL RELATIONS (POIR)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

POIR 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

POIR 593 Practicum in Teaching Politics and International Relations (2, Fa) Practical principles for the long-term development of effective teaching within political science and international relations disciplines. Intended for teaching assistants in Dornsife College. Graded CR/NC. Open only to doctoral students.

POIR 599 Special Topics (2-8, max 8) Subjects in one or more fields in political science.

POIR 600 Political Theory (4) Survey of literature; examination of approaches, concepts, and issues in the field of political theory. Open only to doctoral students. (Duplicates credit in former POSC 530.)

POIR 610 Research Design (4) The course will cover the design of experimental and observational research. We will examine both quantitative and qualitative approaches to social science research. Open only to doctoral students.

POIR 611 Introduction to Regression Analysis (4) The course will introduce students to regression analysis and its application to social science research. Open only to doctoral students.

POIR 613 Topics in Quantitative Analysis (4) Introduces statistical models beyond the standard linear regression model. Topics include maximum likelihood estimation, generalized linear models, and advanced methods. Open only to doctoral students.

POIR 620 American Politics and Policy Processes

(4) Survey of literature; examination of approaches, concepts, and issues in the field of American politics and policy processes. (Duplicates credit in former POSC 510.) Open only to doctoral students.

POIR 640 Comparative Politics (4) Survey of literature; examination of approaches, concepts, and issues in the field of comparative politics. (Duplicates credit in former POSC 520.) Open only to doctoral students.

POIR 660 Introduction to International Relations Theory (4) The primary objective of this course is to introduce Ph.D. students to theoretical and empirical issues related to the study of international relations. Open only to doctoral students.

POIR 661 International Relations Theory: Advanced (4) Examines the specialized nomenclature of international relations and the varied interpretations of basic concepts of international theory; conceptual analysis and criticism. Open only to doctoral students. (Duplicates credit in former IR 501.)

POIR 662 Norms in International Relations (4) Norms structure international relations in political, security, and economic domains. This seminar assesses major theoretical perspectives and empirical research on international norms. Open only to doctoral students.

POIR 670 International Political Economy (4) Survey of approaches to international political economy. Intellectual roots; the management of collective goods; North-South relations are examined. Open only to doctoral students.

POIR 680 International Security and Foreign Policy (4) Examination of the interconnected fields of international security and foreign policy, including decision making and patterns of interaction regarding international conflict. Open only to doctoral students.

POIR 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

POIR 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation. Graded CR/NC.

Jesse M. Unruh Institute of Politics

Von KleinSmid Center 263

(213) 740-8964

FAX: (213) 740-3167

Email: unruhins@usc.edu
dornsife.usc.edu/unruh

Director: Dan Schnur, B.A.

Chief of Staff: Kerstyn Olson, M.A.

The Jesse M. Unruh Institute of Politics sponsors events designed to introduce students to the world of practical politics. Each semester, the institute facilitates internships with government, political and advocacy offices

in the Los Angeles metropolitan area and beyond. The institute also sponsors numerous discussion series that bring prominent political and governmental leaders to USC to speak to small groups of students in an informal setting. In the spring, the institute organizes the Cerrell Seminar in Political Leadership — a trip to Sacramento at which USC students meet with legislators, lobbyists and members of the media to discuss important issues in state politics.

Political Student Assembly

The Unruh Institute of Politics works closely with the Political Student Assembly (PSA). PSA was formed in

January 2006 as a division of the Student Affairs Program Board and seeks to actively involve students in campus, state and national political issues.

Directed Government and Political Leadership Internship

Students volunteer to work in one of over 500 political and governmental offices throughout the Los Angeles area, in Sacramento and in Washington, D.C., enabling them to gain firsthand political experience. As interns, students acquire basic political understanding and skills in government, campaign, media or advocacy organizations. Through their assignments, students have the

opportunity to develop an understanding of the many ways in which people are important to politics and politics to people.

By gaining hands-on experience in government and politics, student interns develop real-world political and job skills to assist them in their future careers.

Many talented interns are fortunate enough to secure full-time employment based upon their internship experience.

Students enroll in POSC 395 Directed Governmental and Political Leadership Internship, for two to eight units. Students can enroll in POSC 395 during the fall,

spring or summer. In the summer, students can apply for institute-sponsored fellowships to help defray tuition and living expenses.

Professional Writing Program

Office of Advanced and Professional Programs

Mark Taper Hall 355

(213) 740-1384

FAX: (213) 740-5002

Email: mpw@dornsife.usc.edu

dornsife.usc.edu/mpw

Director: Brighde Mullins, MFA

Professor of the Practice: Brighde Mullins, MFA

Assistant Professors (Teaching): Prince Gomolvilas, MFA; Dinah Lenney, MFA

Senior Lecturer: Dana Goodyear

Lecturers: M.G. Lord; Gina B. Nahai, MPW

The Master of Professional Writing Program develops students' mastery of craft across multiple genres and prepares students for writing careers. It is designed for students who want to explore a range of writerly possibilities, and aims to develop writing and writers across genre, including fiction, nonfiction, poetry, new media, and writing for stage and screen. Program faculty are working writers who bring their expertise to seminars, lectures and workshops.

The academic curriculum includes a range of courses that focus on all aspects of the writing life, as well as one-on-one tutorials geared to the completion of a professional quality final project. Although students will ultimately focus in one genre, the degree is specifically intended for writers interested in exploring the connections to be found in literature, entertainment and art. Program graduates include television writers, screenwriters, writers and teachers of literary fiction and poetry, Web content providers and designers, editors, publishers, and technical writers.

Admission Requirements

Admission to the program is competitive and is based on the following: possession of a baccalaureate degree from an accredited college or university with a minimum 3.0 GPA; respectable scores on the General Test of the Graduate Record Examinations; three letters of recommendation; a writing sample including at least 20 original pages. Applicants focusing in poetry or writing for stage and screen must also submit a short prose sample of at least five original pages; this may be a college paper, essay or excerpt of short fiction. Campus visits during regularly scheduled open-houses are encouraged, but not required.

Degree Requirements

Thirty units of work are required to earn the MPW degree. MPW 500 Survey of Professional Writing (3 units) is required and should be taken in the first semester.

Fifteen additional units must be earned in the student's major genre (fiction, nonfiction, poetry, or writing for stage and screen), including MPW 592abz Professional Writing Project or MPW 594abz Master's Thesis. While taking Professional Writing Project or Master's Thesis, with advisement from their faculty mentors, students will generate their master's professional projects in their respective genres. These projects may be a full length novel, a collection of short stories, a nonfiction manuscript, a collection of essays, a collection of poems, or a full length screenplay or stageplay. The remaining 12 units consist of electives from the MPW curriculum, and students are encouraged to choose widely.

Progressive Degree Program in Master of Professional Writing

The progressive degree program permits exceptional undergraduate students to receive both a Bachelor of Arts and a Master of Professional Writing within five years. It is intended for students with extraordinary MPW preparation and performance who demonstrate a superior level of overall scholarship.

Admission

Applicants may apply after the completion of 64 units of course work applicable to their undergraduate degree since graduating from high school. (AP units, IB units and course work taken prior to high school graduation are excluded). Applicants must submit their applications before completing 96 units of course work. Normally, the application is submitted in the fall semester of the third year of enrollment at USC. The application for admission to a progressive degree program must be accompanied by a departmentally approved course plan proposal and two letters of recommendation from USC faculty members in the Master of Professional Writing program.

Awarding of Degrees

Progressive degree program students must fulfill all of the requirements for both the bachelor's degree and the master's degree, including a professional writing project or a master's thesis. The unit requirement for the master's degree can be reduced by as much as one-third. The degrees may be awarded separately, but the master's degree will not be awarded before the undergraduate degree.

Time Limits

The time limit for completing a progressive degree program is 12 semesters.

Further details about progressive degrees can be found on page 87xx.

Courses of Instruction

PROFESSIONAL WRITING PROGRAM (MPW)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

MPW 500 Survey of Professional Writing (3) Analysis of genres, characteristics of narration, stylistic editing, and the role of the writer in contemporary society. Required of all MPW majors. (Duplicates credit in former MPW 900.)

MPW 510 Writers and their Influences (3) Exploration of the notion of influence and its effect on generating new writing.

MPW 511 Oral History: Witness and Writing (1, max 3) Transforming oral history into works of fiction and nonfiction, with emphasis on honoring the source material in the construction of an original narrative.

MPW 512 Writer's Marketplace (3) A cross-genre investigation of publishing and the marketplace, with the goal of familiarizing students with the practical aspects of writing and selling creative work. (Duplicates credit in former MPW 910.)

MPW 515 Functional Writing for the Marketplace (3) Practical writing and editing skills, language mechanics, and document development techniques that can be applied to reports, grants/proposals, brochures, résumés, and other workplace materials. (Duplicates credit in former MPW 950.)

MPW 520 Writing Humor: Literary and Dramatic (3) Analysis of the specifics of humor — wit, irony, satire, parody and farce — through examples taken from various genres; discussion/workshop on incorporating humor in students' work. (Duplicates credit in former MPW 915.)

MPW 525 Nonfiction Strategies in Poetry and Prose (3) A workshop devoted to shared concerns and possibilities in poems and essays, and to the development of skills as enhanced by nonfiction techniques.

MPW 526 Writing the Review (1, max 3) An investigation of the evolving role of the critic, focused on reviews as essays, and criticism as essential to a rich popular culture and conversation.

MPW 527 Mash-Ups: New Ways to Tell Stories (1, max 3) An examination of innovative storytelling, in which old and new media in tandem can extend our narrative capabilities, and connect us across the world.

MPW 530 Techniques of Fiction Writing (3) A nuts and bolts approach to craft, aiming to identify the requisite tools, and to develop skills necessary for writing vivid and convincing fiction.

MPW 535 Literature and Approaches to Writing the Novel (3) Discussion and analysis of literary classics and their influences as applicable to the writing of today's novel; development of book-length fiction. (Duplicates credit in former MPW 940.)

MPW 537 Fiction Writing Workshop (3, max 9) Development and analysis of book-length fiction; concentration on narration, characterization, point of view, and clarity of style. (Duplicates credit in former MPW 960.)

MPW 538 Approaches to Writing the Novel (1, max 3) A survey of literary classics, focusing on recurring techniques, with the goal of identifying strategies to inform the student's approach to narrative and craft.

MPW 540 Nonfiction Writing (3, max 6) The investigation of various forms in the genre, with attention to the literary value of thinking and making connections on the page.

MPW 541 The Nonfiction Experience (3, max 6) Introduction to nonfiction from reviewing to reporting to the personal essay, with a view towards creating the community essential in the solitary writer's life.

MPW 542 Writing About Place (3, max 6) An exploration of environment as it informs literature, fiction and nonfiction, with the understanding that a vivid evocation of place will enrich prose across genres.

MPW 543 Writing Science (3, max 6) Introduction to science writing with a view towards broadening approaches to story-telling in all genres.

MPW 544 New Media: Writing Online (3, max 6) An examination of literary forms online. Students will emulate great print stylists, shaping narrative and cultivating voice with the possibilities of new media in mind.

MPW 545 Memoir Writing (3, max 6) A workshop designed to hone voice, and determine the best way to approach personal narrative in cultural and historical contexts.

MPW 546 The Personal Essay (3, max 6) A look at first-person narrative, from memoir to criticism, with a view towards cultivating favorite writerly strategies, and then trying less comfortable forms.

MPW 547 Selling the Nonfiction Book (3, max 6) From the proposal to the outline, a comprehensive look at selling a book-length work of nonfiction, including the completion of a first chapter and promotional précis.

MPW 552 Principles of Poetic Techniques (3, max 6) Beginning analysis and practice of poetic technique, including language and imagery; forms, devices, and conventions; developing voice; use of both traditional and open forms. (Duplicates credit in former MPW 970.)

MPW 554 Poetry Hybrids (3, max 6) Writing and reading poetry in combination with other genres. Forms may include prose poem, verse drama, verse novel, and epic.

MPW 557 Advanced Poetry Writing (3, max 6) Advanced topics in poetry, including wide reading in contemporary poets. Emphasis on the development of the individual voice and subject matter. (Duplicates credit in former MPW 980.)

MPW 560 Principles of Dramatic Structure (3, max 6) Analysis of techniques in preparing scripts for various media; practice in adapting materials from non-dramatic forms. (Duplicates credit in former MPW 920.)

MPW 561 Writing for Stage and Screen (3, max 6) A workshop that examines the art and craft of writing for stage and screen.

MPW 562 Story Conference (3, max 6) Writing the play, teleplay or screenplay, focusing on character development and scene structure, in collaboration with the workshop. (Duplicates credit in former MPW 930.)

MPW 567 Screenplay Workshop (3, max 6) Reading and viewing films with an eye toward the development and completion of the first 45–60 pages of an original screenplay.

MPW 568 Screenwriting across Genres (3, max 6) An investigation of varieties of storytelling through creative responses to both screenplay and non-screenplay forms.

MPW 575 In the Room: The Craft of Television Writing (1, 3, max 6) Introduction to television writing, from pitching to polishing, with all the responsibilities of a staff writer.

MPW 585 Seminar in Professional Writing (1 or 3, max 6) Seminar and workshop with adjustable focus on aspects of professional and creative writing in relation to the literary marketplace.

MPW 589 Internship: Writers in the Field (1–3, max 3) Practical experience in the writing world. Enables students to acquire skills and knowledge that cannot be gained in the classroom. Graded CR/NC.

MPW 590 Directed Research (1–3, max 9) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the program director. Graded CR/NC.

MPW 592abz Professional Writing Project (3-3-0) Supervised preparation of a full-length manuscript in student's major concentration: fiction, nonfiction, poetry, or writing for stage and screen. Credit upon completion of project. Graded IP/CR/NC.

MPW 594abz Master's Thesis (2-2-0) Credit on acceptance of thesis. Graded CR/NC.

MPW 599 Special Topics (2–4, max 8) Studies in specific genres, techniques or aspects of the writing craft.

Psychology

Seeley G. Mudd Building 501
(213) 740-2203
FAX: (213) 746-9082
Email: psychology@dornsife.usc.edu
dornsife.usc.edu/psych
Chair: JoAnn M. Farver, Ph.D.*

Faculty

University Professor and Dana Dornsife Chair in the Dornsife College of Letters, Arts and Sciences: Hanna Damasio, M.D.

University Professor and David Dornsife Chair in the Dornsife College of Letters, Arts and Sciences: Antonio Damasio, M.D., Ph.D.

Harold Dornsife Chair in Neurosciences: Irving Biederman, Ph.D.

Provost Professor of Psychology and Business: Wendy Wood, Ph.D.

Provost Professor of Social Work, Preventive Medicine, Psychiatry, Family Medicine and Gerontology: William Vega, Ph.D.

Mendel B. Silberberg Professor of Social Psychology: Norman Miller, Ph.D.

Professors: Michael A. Arbib, Ph.D. (*Computer Science and Biological Sciences*); Laura A. Baker, Ph.D.; Antoine Bechara, Ph.D.; Irving Biederman, Ph.D.;

Sarah W. Bottjer, Ph.D. (*Biological Sciences*); John Briere, Ph.D. (*Psychiatry*); Peter Carnevale, Ph.D. (*Business*); Kathleen C. Chambers, Ph.D.; Gerald C. Davison, Ph.D.*; Michael E. Dawson, Ph.D.; JoAnn M. Farver, Ph.D.; Caleb E. Finch, Ph.D. (*Gerontology and Biological Sciences*); Margaret Gatz, Ph.D.*; Ernest Greene, Ph.D.; Andrea Hollingshead, Ph.D. (*Communication*); Bob G. Knight, Ph.D. (*Gerontology*); David G. Lavond, Ph.D.; Pat Levitt, Ph.D. (*Cell and Neurobiology*); Steven Lopez, Ph.D.; Thomas D. Lyon, J.D., Ph.D. (*Law*); Franklin R. Manis, Ph.D.*; Gayla Margolin, Ph.D.; John J. McArdle, Ph.D.; Beth E. Meyerowitz, Ph.D.*; Lynn Miller, Ph.D. (*Communication*); Shrikanth (Shri) Narayanan, Ph.D. (*Engineering*); Carol A. Prescott, Ph.D.; Stephen J. Read, Ph.D.; Robert Rueda, Ph.D. (*Education*); Elyn R.

Saks, J.D. (*Law*); Dan Simon, SJD (*Law*); Steven Yale Sussman, Ph.D. (*Institute for Prevention Research, Medicine*); Larry Swanson, Ph.D. (*Biological Sciences*); Penelope K. Trickett (*Social Work*); Suzanne Wenzel (*Social Work*); Rand Wilcox, Ph.D.; Elizabeth Zelinski, Ph.D. (*Gerontology*)

Associate Professors: Stanley J. Huey, Jr., Ph.D.; Laurent Itti, Ph.D. (*Computer Science*); Richard S. John, Ph.D.; Stephen A. Madigan, Ph.D.; Mara Mather, Ph.D. (*Gerontology*); Bartlett Mel, Ph.D. (*Biomedical Engineering*); Toben Mintz, Ph.D.; John Monterosso, Ph.D.*; Joseph Priester, Ph.D. (*Business*); David Schwartz, Ph.D.; Bosco S. Tjan, Ph.D.; David A. Walsh, Ph.D.

Assistant Professors: Cleopatra Abdou, Ph.D. (*Gerontology*); Giorgio Coricelli (*Economics*); Jesse Graham, Ph.D.; Tara Gruenewald, Ph.D.; Mary Helen Immordino-Yang, Ph.D. (*Education*); Adam Leventhal, Ph.D. (*Institute for Prevention Research, Medicine*); Henrike Moll, Ph.D.; Scott Wiltermuth, Ph.D., (*Business*); Justin Wood, Ph.D.

Clinical Professors: A. Steven Frankel, Ph.D.; Ernest R. Katz, Ph.D.; Jonathan S. Kellerman, Ph.D.

Clinical Assistant Professor: Marian Williams, Ph.D.

Associate Professor (Research): Jonathan Gratch, Ph.D. (*Computer Science*); Susan Luczak, Ph.D.; Stacy Marsella, Ph.D. (*Computer Science*)

Associate Professor (Teaching): Ann Renken, Ph.D.

Assistant Professors (Research): Karen M. Hennigan, Ph.D.; Jonas Kaplan, Ph.D.

Assistant Professor (Teaching): C. Miranda Barone, Ph.D.

Assistant Professors of the Practice: Shannon Couture, Ph.D.; Danielle Kennan-Miller, Ph.D.

Lecturers: William Breland, Ph.D.; Regina Chopp, Ph.D.; Kimberle Kelly, Ph.D.; Clayton Stephenson, Ph.D.; Alex Yukik, J.D., Psy.D.

Adjunct Professors: Lynne Bernstein, Ph.D.; Elizabeth Susman, Ph.D.

Adjunct Professor (Research): Nancy Pederson, Ph.D.

Adjunct Associate Professor: Joanne Steuer, Ph.D.

Adjunct Assistant Professor: Jasmine Tehrani, Ph.D.

Adjunct Assistant Professor (Research): Kaspar Meyer, Ph.D.

University Professor Emeritus and William M. Keck Chair Emeritus in Psychology and Biological Sciences: Richard F. Thompson, Ph.D.

Emeritus Professors: Norman Cliff, Ph.D.; William W. Grings, Ph.D.; Albert R. Marston, Ph.D.; Sarnoff A. Mednick, Ph.D.

Emeritus Associate Professor: Milton Wolpin, Ph.D.

Academic Program Staff

Clinical Associates: Caroline Bailey, Ph.D.; Barbara Cadow, Ph.D.; Kenneth Cole, Ph.D.; Vivian Fernandez-Credidio, Ph.D.; Beth Leedham, Ph.D.; Michael Maloney, Ph.D.; Karen Meiselman, Ph.D.; Pamela Oliver, Ph.D.; Berta Ortiz, Ph.D.; Cynthia G. Pearson, Ph.D.; Joanne Steuer, Ph.D.; Charles Weinstein, Ph.D.

*Recipient of university-wide or college teaching award.

The Department of Psychology offers five topical areas: (1) Cognitive, which analyzes the biological and social bases of phenomena and abilities such as appetitive behavior learning, memory, perception, decision making, social understanding, emotion, intelligence, behavior disorders, language development and language comprehension — among humans and related higher animals; (2) Developmental, which studies changes in behavior — cognitive, linguistic, social and emotional — from childhood through adolescence and adulthood into old age; (3) Clinical, which focuses on the ways people cope, or have difficulty coping, with problems in behavior, emotions, social interaction, aging, health-related behavior, and substance use and abuse; (4) Biological, which examines the biological bases of behavior, including behavioral genetics, behavioral endocrinology, and cognitive neuroscience; and (5) Social, which examines normal human nature and conduct, develops and tests theories concerning the consequences of our social condition and its potential improvement.

In addition, the department offers a joint major in linguistics/psychology and participates in the Dornsife College's interdisciplinary program in neuroscience.

Research is integral to psychology; it enables the faculty to make contributions in the field and to be more effective teachers. Undergraduate students are encouraged to work with members of the faculty on research projects. The most direct way for students to participate in research is to enroll in a directed research course, but it is also possible to take part in ongoing research in less formal ways. Further options for research training include the honors program for psychology majors and the progressive degree program that permits students to complete all requirements for both the B.A. and the M.A. degrees in psychological science in five years.

Undergraduate Degrees

Major Requirements for the Bachelor of Arts in Psychology

Grade Requirement

A grade of C- or higher is required to count a class toward major requirements.

REQUIRED COURSES, LOWER-DIVISION		UNITS
MATH 116*	Mathematics for the Social Sciences	4

PSYC 100	Introduction to Psychology	4
PSYC 274L**	Statistics I	4

*At least one math course of 2.67 units or more is required. MATH 116 or a course of a comparable or higher level is required. Students with a strong math background may profit from a more advanced class.

Thirty-two upper-division psychology units are required, including:

REQUIRED COURSES, UPPER-DIVISION		UNITS
PSYC 314L**	Research Methods	4
PSYC 316L	Non-Experimental Research Methods	4

**It is recommended that no more than two upper-division psychology courses be taken prior to the completion of PSYC 274L and PSYC 314.

One course from each of four of the following five lists is also required:

COGNITIVE		UNITS
PSYC 301L	Cognitive Processes	4
PSYC 304L	Sensation and Perception	4
PSYC 305	Learning and Memory	4
PSYC 440	Introduction to Cognitive Neuroscience	4

DEVELOPMENTAL		UNITS
PSYC 336L	Developmental Psychology	4
PSYC 337L	Adult Development and Aging	4
PSYC 339L	Origins of the Mind	4

CLINICAL		UNITS
PSYC 360	Abnormal Psychology	4
PSYC 361	Introduction to Clinical Psychology	4

BIOLOGICAL		UNITS
PSYC 320	Principles of Psychobiology	4
PSYC 326	Behavioral Neuroscience	4
PSYC 404L	Psychophysiology of Emotion	4
PSYC 420	Animal Behavior	4
PSYC 426	Motivated Behaviors	4

SOCIAL		UNITS
PSYC 355	Social Psychology	4
PSYC 359	Interpersonal Relations	4

Two 400-level psychology courses other than 490x totaling eight units are also required. PSYC 404L, PSYC 420 and PSYC 426 may not count toward this requirement if used to satisfy the biological category above.

An additional psychology course, either upper or lower-division of at least 2.67 units is required.

Bachelor of Arts, Social Sciences, with an Emphasis in Psychology Requirements

The required courses are: PSYC 100, one math class of 2.67 units or more (MATH 116 is recommended; students with a strong math background may profit from a more advanced course); PSYC 274L; and eight upper-division courses in departments in the social sciences, including five in the Department of Psychology and three outside the department but within the division. These may be any 300- or 400-numbered courses.

Requirements for the Bachelor of Arts with a Combined Major in Linguistics and Psychology

For the lower division: LING 210, PSYC 100 and PSYC 274L are required. For the upper division the following courses are required: LING 301 and LING 302; PSYC 314L; two courses selected from LING 380, LING 401, LING 402, LING 403, LING 405, LING 406, LING 407, LING 410, LING 415, LING 466 and LING 485; three additional courses selected from LING 406, PSYC 301L, PSYC 326, PSYC 336L, PSYC 337L, PSYC 424 and PSYC 433. See Department of Linguistics, page 395xx.

Bachelor of Arts in Cognitive Science

Director: Toben Mintz, Ph.D.

Cognitive science is an interdisciplinary major that focuses on the mind and cognition from a variety of perspectives and approaches. The core and electives sample from courses from anthropology, computer science, linguistics, mathematics, philosophy and psychology.

The major consists of four fixed core courses, plus two tiers of flexible core courses. The first tier generally consists of more introductory courses and the second tier of more advanced courses, although there are exceptions, and some courses satisfy either tier. Students must take two courses from the first tier and three courses from the second. The purpose of the flexible tiers is to structurally implement interdisciplinary breadth with some degree of flexibility. The flexible core is a subset of the electives, from which students can choose in order to complete the required number of units.

Students may elect to focus their curriculum from one of three tracks, which are suggested courses of study for focusing on a particular theme in cognitive science. This may be accomplished through individual advisement: language, reasoning and decision-making, and the computational mind.

Total required units for major: 43–48 units. Consisting of 16 core units, 18–20 flexible core units and 9–12 elective units.

CORE REQUIREMENTS (4 COURSES)		UNITS
PSYC 100	Introduction to Psychology	4
PSYC 274L	Statistics I	4
PSYC 301L	Cognitive Processes	4
PSYC 339L	Origins of the Mind	4
		16

FLEXIBLE CORE REQUIREMENTS (5 COURSES)		UNITS
Two courses from:		
CSCI 455*	Introduction to Programming Systems Design	4
LING 210	Introduction to Linguistics	4
LING 301*	Introduction to Phonetics and Phonology	4
LING 302*	Introduction to Syntax and Semantics	4
PHIL 250ab	Elementary Formal Logic	2-2
PHIL 262	Mind and Self: Modern Conceptions	4
PSYC 304L	Sensation and Perception	4
PSYC 336L	Developmental Psychology	4

Three courses from:

ANTH 306	Primate Social Behavior	4
ANTH 308	Origins and Evolution of Human Behavior	4
CSCI 460*	Introduction to Artificial Intelligence	3
LING 405	Child Language Acquisition	4
LING 406	Psycholinguistics	4
LING 407	Atypical Language	4
PHIL 350	Symbolic Logic	4
PHIL 422	British Empiricism	4
PHIL 462	Philosophy of Mind	4
PHIL 465	Philosophy of Language	4
PSYC 304L	Sensation and Perception	4
PSYC 336L	Developmental Psychology	4
PSYC 401	Evolutionary Psychology	4
PSYC 420	Animal Behavior	4
PSYC 422*	Human Judgment and Decision Making	4
PSYC 433*	Children's Learning and Cognitive Development	4
PSYC 450L	Neural Network Models of Social and Cognitive Processes	4
PSYC 454	Social Cognition	4
		18–20

ELECTIVES (3 COURSES)		UNITS
ANTH 200L	The Origins of Humanity	4
ANTH 306	Primate Social Behavior	4
ANTH 308	Origins and Evolution of Human Behavior	4
ANTH 406	Theory and Method in Biological Anthropology	4
CSCI 101L	Fundamentals of Computer Programming	3
CSCI 102L*	Data Structures	3
CSCI 200L*	Object-Oriented Programming	3
CSCI 271*	Discrete Methods in Computer Science	3
CSCI 455X	Introduction to Programming Systems Design	3
CSCI 460*	Introduction to Artificial Intelligence	3
LING 210	Introduction to Linguistics	4
LING 301*	Introduction to Phonetics and Phonology	4
LING 302*	Introduction to Syntax and Semantics	4
LING 405	Child Language Acquisition	4
LING 406	Psycholinguistics	4
LING 407	Atypical Language	4
MATH 116	Mathematics for the Social Sciences	4
PHIL 250ab	Elementary Formal Logic	2-2
PHIL 262	Mind and Self: Modern Conceptions	4
PHIL 350	Symbolic Logic	4
PHIL 422	British Empiricism	4
PHIL 423	The Critical Philosophy of Kant	4
PHIL 462	Philosophy of Mind	4
PHIL 463	Theories of Action	4
PHIL 465	Philosophy of Language	4
PHIL 486	Methodologies of the Sciences	4

PSYC 304L	Sensation and Perception	4
PSYC 336L	Developmental Psychology	4
PSYC 401	Evolutionary Psychology	4
PSYC 420	Animal Behavior	4
PSYC 422*	Human Judgment and Decision Making	4
PSYC 424	Neuropsychology	4
PSYC 425	Functional Imaging of the Human Brain	4
PSYC 433*	Children's Learning and Cognitive Development	4
PSYC 440	Introduction to Cognitive Neuroscience	4
PSYC 450L	Neural Network Models of Social and Cognitive Processes	4
PSYC 454	Social Cognition	4
		9–12

*Prerequisite required

Total units: 43–48

Note: A course that is listed in both flexible core categories can be taken in either one. Students must choose a minimum of 16 upper-division units from the flexible core and electives lists.

Minor in Psychology

The minor requires six courses: PSYC 100 and five additional courses:

One course is required in each of three of the five topic areas listed under Major Requirements. PSYC 314L may be used to fulfill one of these topic areas.

Two elective PSYC courses. One must be upper-division, 300-level or higher.

Limitations:

1. Students must complete at least 16 upper-division PSYC units.
2. No more than four units of PSYC 490x is applicable to the minor.
3. Each of the six courses must be at least 2.67 units.

Minor in Psychology and Law

This interdisciplinary minor brings together courses in psychology that focus on the social, clinical, cognitive and societal aspects of psychology and how it relates to law. This knowledge is augmented with courses from the USC Gould School of Law that identify the relationship between mental health, social psychology and law.

Twenty-four units are required for the minor. A minimum of four courses (16 units) must be unique to the minor. Psychology majors and students majoring in social sciences with an emphasis in psychology may “double count” up to two courses toward the major and minor; however, they must take a minimum of four courses that do not apply to the major.

Required Courses

PSYC 100 or LAW 200 (PSYC 100 is a prerequisite to upper-division PSYC classes). Psychology majors must take both courses.

Elective Requirements

At least two upper-division courses in Psychology taken from the following list: PSYC 301, PSYC 304, PSYC 355, PSYC 360, PSYC 454, PSYC 463, PSYC 465.

At least two upper-division Law classes from the following list: LAW 402, LAW 403, LAW 404.

No more than one course from the following list may be used to complete the four unique courses requirement: ANTH 355, ANTH 371, SOCI 350, SOCI 351, SOCI 353.

Minor in Consumer Behavior

This interdisciplinary minor explores consumer thinking from the perspective of psychology, marketing, economics, anthropology, sociology and other departments interested in popular culture. Why do people form the attitudes and impressions they do? How do individual factors, culture, mass media, economics and social trends influence people's decisions? See USC Marshall School of Business, page 149xx.

Minor in Critical Approaches to Leadership

See the Department of Interdisciplinary Studies, page 375xx.

Honors Program

The department offers an honors program for outstanding students in the B.A., Psychology major who desire advanced research training in preparation for graduate work in the social sciences or in professional schools. The primary focus of the honors program is the completion of a research study under the guidance of a faculty adviser. Students are admitted to the program in the fall semester of their junior year. To be eligible for admission, a student must have an overall GPA of at least 3.5 at the time of application to the program. This program is not available to students majoring in Social Sciences with an emphasis in Psychology. Students in the honors program complete all major requirements, including PSYC 380 Junior Honors Seminar during the spring semester of their junior year and PSYC 480 Senior Honors Seminar during the spring semester of their senior year. Students complete an honors thesis proposal as part of the Junior Honors Seminar and must submit a completed senior honors thesis by April 1 of the senior year. Students are also expected to have an overall GPA of at least 3.5 at the time of graduation. For further information, contact the undergraduate adviser.

Progressive Degree Program in Psychology

This progressive degree program permits superior students to complete all requirements for both the B.A. and the M.A. degrees in psychological science in five years. Students may apply on completion of 64 units of course work applicable to their undergraduate degrees since graduating from high school (AP units, IB units and course work taken prior to high school graduation are excluded), but not later than the end of their junior year (or the completion of 96 units). To be eligible for admission, students must have at least a 3.5 overall GPA and must have completed PSYC 274L Statistics and PSYC 314 Research Methods with at least a B+ in each. The application for admission to a progressive degree program must be accompanied by an approved course plan proposal and letters of recommendation from two USC faculty members (at least one in the Department of Psychology who agrees to mentor the student). The requirements for both the B.A. and M.A. degrees must be satisfied. Further details about progressive degrees can be found on page 87xx.

Psi Chi

Psi Chi is the national honor society in psychology. Membership is open to graduate and undergraduate men and women who meet the minimum qualifications. Psi Chi is a member of the Association of the College Honor Societies and is an affiliate of the American Psychological Association and the American Psychological Society.

Graduate Degrees

The Department of Psychology offers an M.A. in Psychological Science and an M.S. in Human Behavior as well as a variety of programs leading to the Ph.D. degree. They fall within five major groupings: (1) clinical science, including specializations in adult clinical, clinical-aging and child and family; (2) developmental psychology, including child and adolescent development and adult development and aging; (3) brain and cognitive science, including cognitive neuroscience, behavioral neuroscience, clinical neuroscience and behavioral genetics; (4) quantitative methods; and (5) social psychology.

All of the specialty areas provide training for careers in research, teaching and applied work.

Admission Requirements

Psychology courses required for admission are an introductory course, a course in statistics, a course in research methods or experimental psychology and at least one of the following: comparative psychology, physiological psychology, sensation and perception, learning and memory, motivation, and emotion; and at least one course from each of the following lists: (1) one or more of comparative psychology, physiological psychology, sensation and perception, learning and memory, motivation, and emotion; and (2) one or more of developmental psychology, social psychology, abnormal psychology, personality, and history of psychology. Additional courses are desirable, as is work in the biological, physical and social sciences, in mathematics and in philosophy. Students with less background in psychology but outstanding undergraduate records in related fields are also encouraged to apply.

Students are selected on the basis of undergraduate records, scores on the Graduate Record Examinations General Test, course background, letters of evaluation, personal statement of interests and goals and evidence of research skills or interests (e.g., publications or participation in research projects).

The faculty of each specialty area select the students to be admitted in that area. Because of this procedure, applicants should designate the specialty area to which they seek admission.

Application for admission in psychology requires submission of two sets of material: special departmental forms and university application forms. Students are admitted only for study beginning in the fall semester; both sets of completed application forms must be submitted by December 1 for admission the following fall.

Degree Requirements

These degrees are under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue (page 97xx) for general regulations. All

courses applied toward the degrees must be courses accepted by the Graduate School.

Master of Arts in Psychological Science

The M.A. in Psychological Science is designed for superior students who wish to further their research training and to acquire the methodological background and hands-on research experience to define their scholarly interests and to pursue graduate education, professional degrees or careers requiring advanced skills in research and writing. This is a terminal degree. Students who wish to pursue their doctorate at USC should apply directly to the Ph.D. program initially.

Admission Requirements

A minimum 3.5 cumulative GPA in the bachelor's degree and grades of at least B+ in an undergraduate statistics and an undergraduate methods course are required for admission. Students must also submit a statement from a proposed faculty adviser committing to mentor the student's research for the thesis requirement.

Course Requirements

This program requires a minimum of 24 units at the graduate level. The student must complete one course in each of the following three areas and a fourth course in any one of the three areas.

Category A. *Statistics and Research Design*: PSYC 500L (4), PSYC 501L (4), PSYC 502L (4), PSYC 503 (4), PSYC 504 (4), PSYC 520 (4), PSYC 524 (4), PSYC 575L (4), PSYC 577 (4), PSYC 578 (4), PSYC 616 (4), PSYC 621 (4), PSYC 622 (4)

Category B. *Biological Bases of Behavior* (physiological psychology, comparative psychology, neuropsychology, sensation and perception, psycho-pharmacology, behavior genetics) and *Cognitive-Affective Bases of Behavior* (learning, thinking, motivation, problem-solving): LING 676 (3), PSYC 506 (4), PSYC 510 (4), PSYC 540 (4), PSYC 544 (4), PSYC 545 (4), PSYC 546 (4), PSYC 547 (4), PSYC 551 (4), PSYC 555 (4), PSYC 576 (3), PSYC 586 (3), PSYC 606 (4), PSYC 607 (4)

Category C. *Social Bases of Behavior* (social psychology, group processes, organizational and systems theory) and *Individual Differences* (personality theory, human development, abnormal psychology): PSYC 512 (4), PSYC 514 (4), PSYC 533 (4), PSYC 534 (4), PSYC 612 (4), PSYC 660 (4), PSYC 680 (4)

The student must take 2 units of PSYC 590 Directed Research each semester under the supervision of a faculty member who has agreed to serve as the student's faculty mentor. An additional unit of PSYC 590 is required for each 3-unit course taken under Category B; alternatively, a fifth course may be taken by a student who takes one or more 3-unit courses under Category B.

Thesis Requirement

The student will enroll in PSYC 594a during fall semester and PSYC 594b during spring semester and will complete a final paper (either an empirical paper or an extensive review paper) that is written in publication format. The student will submit the thesis to the faculty mentor and two other psychology faculty members by

March 1 and will schedule a one-hour committee meeting to defend the master's thesis prior to graduation.

Master of Arts in Psychology

The department does not admit students whose objective is this master's degree. However, if a student accepted in the doctoral program does not have a master's degree, the department strongly recommends completion of the requirements for the M.A. in Psychology in the course of work toward the Ph.D. degree. This involves 24 units of course work and a thesis.

Master of Science in Human Behavior

Seeley G. Mudd, Room 501

(213) 740-2222

Fax: (213) 746-9082

Email: mhb@dornsife.usc.edu

dornsife.usc.edu/mhb

Program Director: Jerald Jellison, Ph.D.

The Master of Science in Human Behavior program (MHB) is designed for individuals who wish to pursue or advance a career in a non-academic field where knowledge of human behavior is essential to effective job performance. The program stresses practical applications of psychological principles, including attitude formation, persuasion, negotiation and job satisfaction.

The program is especially appropriate for those who have majored in a behavioral science field, e.g., psychology, sociology, political science or anthropology. These applicants must have received their baccalaureate degree by the semester in which they begin the program.

Applicants must apply for admission to the Graduate School, and satisfy all requirements for admission. Details on the method for applying, admission criteria and deadlines can be found at dornsife.usc.edu/mhb.

Thirty-four units of course credit is required for the MHB degree. These units are taken from an inventory of courses that are specified for the MHB program. The following courses are acceptable: PSYC 415L, PSYC 421L, PSYC 422, PSYC 451, PSYC 453, PSYC 454, PSYC 504, PSYC 505, PSYC 513, PSYC 517, PSYC 550ab, PSYC 552, PSYC 556, PSYC 590, PSYC 591, PSYC 592, PSYC 616, PSYC 622. No more than two 400-level courses can be applied toward the degree.

PSYC 592 is required of all students. PSYC 550ab and PSYC 591 will normally be required for students having less than two years of full-time work experience in a program-related field. The normal requirement for these students will be an aggregate of 8 units of internship upon completion of the program. However, the specific number of units taken in a given semester will depend in part on what options are available from internship sponsors. Based on the student's academic background, work experience and career goals, a contractual plan of study will be developed that details what other courses are required and/or available as electives.

The program for a given cohort of students begins in the fall semester. The normal expectation is that full-time students will take 12 units as a full-time course load in the fall, 12–16 units in the spring, and 4–8 units of internship together with PSYC 592 MHB Treatise (2 units) the following summer to complete requirements for the MHB degree. Part-time students will generally take one or two courses per semester, and must complete the program within five years.

Doctor of Philosophy in Psychology

Residency Requirement

A minimum of 24 graduate units at USC is required for the doctoral degree.

Course Requirements

Each student must take at least 36 substantive units in psychology at USC during the first three years. Students must complete one statistics and/or research methods course as well as a set of core courses that cover topics in brain and cognitive sciences and clinical, developmental and social areas, the specifics of which are provided in the department's handbook for graduate students. Additional course requirements vary according to specialty area.

Research Requirement

During the first and second year, students work on either a master's thesis or a research report of comparable scope and quality. A research project done at USC is required of all students (by the conclusion of the summer following the student's second year), regardless of prior graduate work.

Screening Procedure

The student's ability to master graduate-level course material is first evaluated after completion of no more than 24 units, and not later than the third semester of graduate work at USC. The final screening procedure is the successful completion of a second-year project requirement. This evaluation is based on the student's performance in courses taken and on an evaluation of the student's research competence as reflected in the second year research project. The project is evaluated by a committee of three faculty, including the student's primary adviser.

Additionally, students are evaluated each year based on adviser input, course work and research progress.

Qualifying Exam Committee

In preparation for the qualifying examination, each student assembles a five-person qualifying exam committee to direct the student's program of studies and evaluate research competence. The committee continues to serve until after the qualifying examination has been passed, the dissertation topic approved, and the student admitted to candidacy for the Ph.D. At that time the student assembles a dissertation committee of four or more members (usually consisting of members of the qualifying exam committee, one of whom must be a faculty member from outside the department), who advise on and evaluate the dissertation.

Qualifying Examination

The qualifying examination evaluates the student's ability to conduct independent scholarship and research. The student is evaluated based on oral and written presentation of two elements: a written review paper or written exam and the dissertation proposal. The qualifying examination is planned, administered and evaluated by the student's qualifying exam committee. It should be taken no later than during the fifth semester.

Doctoral Dissertation

A student is expected to engage in research activity throughout his or her graduate career, leading up to and

culminating in the Ph.D. dissertation. The dissertation is based on an original investigation, usually involving empirical data.

Defense of the Dissertation

The student's doctoral dissertation is defended at either a defense oral, based on an approved preliminary copy of the dissertation, or a final oral, based on the final version of the dissertation.

Advisement

Each student has a major adviser who is usually in the specialty area. The qualifying exam committee should be formed at least one semester before the student takes the qualifying examination. Advisement concerning graduate school requirements may also be sought from the staff graduate adviser and the faculty member serving as director of graduate studies.

Internship Requirement

Students in the clinical science Ph.D. program need a minimum of three full-time in-residence academic years of graduate study plus one full year of internship at a facility approved by the clinical faculty.

Doctor of Philosophy in Psychology (Clinical) and Master of Public Health (Health Promotion)

Application deadline (for Ph.D.): December 1

The Ph.D./MPH dual degree combines knowledge of clinical psychology research and practice with an understanding of health from a population perspective. The student enrolls primarily in the clinical science doctoral program, while taking additional course work for the MPH. During the second and subsequent years, course work is taken in both programs. The dissertation is undertaken through the Department of Psychology.

Courses of Instruction

PSYCHOLOGY (PSYC)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

PSYC 100 Introduction to Psychology (4, FaSpSm)

Factors that influence human behavior, including learning, thinking, perception, motivation, and emotion; analysis of determinants of development, adjustment, and maladjustment.

PSYC 165Lg Drugs, Behavior and Society (4, Irregular)

An integrative systems perspective of drugs; including their historical, economic, and cultural importance, psychopharmacology, addiction, relationship to crime, and therapeutic use in treating psychological disorders.

PSYC 201Lg The Science of Happiness (4)

Evaluates scientific research on human happiness. Integrates research from psychology, economics, and neuroscience in the evaluation of personal and public policy choices.

PSYC 210gm Social Issues in Gender (4) (Enroll in SWMS 210gm)

PSYC 248 Historical Foundations and Contemporary Trends in Psychology (2) Career planning for psychology majors. Historical developments of the discipline, careers, and skills necessary for careers and graduate school. Graded CR/NC. *Prerequisite:* PSYC100.

PSYC 274L Statistics I (4, FaSpSm) Introduction to the use of statistics in psychology: basic ideas in measurement; frequency distributions; descriptive statistics; concepts and procedures in statistical inference. *Prerequisite:* MATH 114 or MATH 208 or MATH 215 or MATH 265; *recommended preparation:* PSYC 100.

PSYC 275Lg Language and Mind (4, FaSp) (Enroll in LING 275Lg)

PSYC 301L Cognitive Processes (4, Irregular) Experimental and theoretical aspects of human memory, perception, thinking, and language. Lectures, demonstrations, and individual experiments. *Prerequisite:* PSYC100.

PSYC 304L Sensation and Perception (4, Irregular) Receptor processes and stimulus organization; traditional topics in the perception of objects, space, time. Laboratory demonstrations and exercises. *Prerequisite:* PSYC 100.

PSYC 305 Learning and Memory (4, Irregular) Principles involved in classical and operant conditioning. Concentration on basic causes of behavior; consideration of the relevance of simple behavioral laws to complicated human behavior. *Prerequisite:* PSYC 100.

PSYC 314L Research Methods (4, FaSpSm) Experimental research methods in psychology; nature and concepts of scientific method. Lab exercises, data analysis and preparation of APA style empirical report. *Prerequisite:* PSYC 100 and PSYC 274L.

PSYC 316L Non-Experimental Research Methods (4, FaSpSm) Non-experimental research methods in psychology. Observational, survey and data analysis exercises. *Prerequisite:* PSYC 100 and PSYC 314.

PSYC 320 Principles of Psychobiology (4, Irregular) The integrative study of bio-behavioral systems. Evolutionary, developmental, ecological, social, ethological, and physiological factors mediating representative behavioral and psychological phenomenon are examined in detail. *Prerequisite:* PSYC 100.

PSYC 326 Behavioral Neuroscience (4, FaSp) Neural bases of behavior. Concentration on sensory and motor processes and the interaction of neural, chemical, and hormonal systems. *Prerequisite:* PSYC 100.

PSYC 336L Developmental Psychology (4, FaSp) Child and adolescent behavior and associated theories; exploration of the continuity between child and adult behavior. Laboratory projects. *Prerequisite:* PSYC 100.

PSYC 337L Adult Development and Aging (4) Genetic, physical, and social influences during adult years on perception, learning and memory, intelligence, personality, social roles, and normal and deviant behavioral patterns. Laboratory demonstrations and exercises. *Prerequisite:* PSYC 100.

PSYC 339Lg Origins of the Mind (4, Sp) Exploration of ancient philosophical questions concerning the origins of human knowledge through empirical studies of infants, animals, and adults from diverse cultures.

PSYC 355 Social Psychology (4, FaSp) Theoretical and experimental analysis of human behavior. Social processes involved in attitudes, conformity, compliance, interpersonal perception, liking, affiliation, aggression, altruism, and group dynamics. *Prerequisite:* PSYC 100.

PSYC 359 Interpersonal Relations (4, FaSp) Theories and research on person perception, attribution processes, interpersonal attraction and romantic love, freedom and causality, social comparison phenomena. *Prerequisite:* PSYC 100.

PSYC 360 Abnormal Psychology (4, FaSp) The commonly diagnosed behavior pathologies; biological, social, cultural, and developmental antecedents of abnormal behavior; principles of learning, perception, and motivation, as they relate to psychopathology. *Prerequisite:* PSYC 100.

PSYC 361 Introduction to Clinical Psychology (4, Irregular) Introduction to the scientist-practitioner model of clinical psychology, including research methods, psychological assessment and diagnosis, psychotherapeutic interventions, and treatment of special populations. *Prerequisite:* PSYC 100.

PSYC 372 Human Sexuality (4) Psychological and physiological base of sexuality; gender identity, child-bearing, birth control, venereal diseases; dysfunctions and treatments.

PSYC 380 Junior Honors Seminar (2-4, max 8, Sp) Advanced study of scientific inquiry in psychology with in-depth analysis of current research by faculty in the Psychology Department. Preparation for senior honors thesis research. *Corequisite:* PSYC 314L.

PSYC 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

PSYC 391 Directed Field Experience in Psychology (1-4, max 4, FaSpSm) Individual field experience and independent study supervised by an on-site professional and USC faculty sponsor. Open only to psychology majors and minors. *Prerequisite:* PSYC 100; *recommended preparation:* minimum of three courses completed in psychology.

PSYC 401 Evolutionary Psychology (4) Evolutionary and genetic basis of human behavior, including intelligence, sexual behavior, criminal behavior, and violence. Etiology of human diversity, including sex, race, and individual differences. *Prerequisite:* PSYC 100; *recommended preparation:* PSYC 274L.

PSYC 404L Psychophysiology of Emotion (4, Irregular) Introduction to the scientific study of emotional behavior. Emphasizes research into relations between physiological and psychological variables underlying emotional experience. Demonstrations and laboratory. *Prerequisite:* PSYC 100, PSYC 274L, and PSYC 314.

PSYC 405 Child Language Acquisition (4) (Enroll in LING 405)

PSYC 406 Psycholinguistics (4) (Enroll in LING 406)

PSYC 407 Atypical Language (4) (Enroll in LING 407)

PSYC 415L Psychological Measurement (4) Classical and modern approaches to psychological measurement; scaling; test construction; true score reliability model; generalizability theory; validity; decision theoretic selection; item analysis; item response theory. *Prerequisite:* PSYC 314L.

PSYC 420 Animal Behavior (4) Exploration of human nature through studies of nonhuman animals, including topics of navigation, culture, object representation, social cognition, music, and morality. *Prerequisite:* PSYC 100.

PSYC 421L Data Analysis for Psychological Research (4, max 8) Multivariate analysis emphasizing model estimation and testing; topics vary, e.g., multiple regression, logistic regression, factor analysis, multilevel linear modeling, structural equation modeling, multiway frequency analysis. *Prerequisite:* PSYC 314L.

PSYC 422 Human Judgment and Decision Making (4) Descriptive and normative models of decision making; topics include probability judgments, inference, correlation, emotion, mental accounting, decision analysis, lens model, equity, social dilemmas, time, risk. *Prerequisite:* PSYC 314L.

PSYC 424 Neuropsychology (4, Irregular) Effects of brain damage on human behavior and abilities, particularly language, memory, and emotion. Open only to junior standing or higher. *Prerequisite:* PSYC 100.

PSYC 425 Functional Imaging of the Human Brain (4) Introduction to the physical and physiological bases of Magnetic Resonance Imaging (MRI), and principles of functional MRI, safety, design and analysis of experiments, and operation. *Prerequisite:* PSYC 100, PSYC 274.

PSYC 426 Motivated Behaviors (4, Irregular) Social, environmental, and physiological influences on behaviors associated with aggression, eating, reproduction, and sleep. Will focus on behavioral disorders such as violence, anorexia/bulimia, sexual abuse, and insomnia. *Prerequisite:* PSYC 100.

PSYC 430 Social Development of Infants, Children and Adolescents (4) An analysis of selected topics and issues in child social development. *Prerequisite:* PSYC 100; *recommended preparation:* PSYC 274L, PSYC 314L, PSYC 336L.

PSYC 433 Children's Learning and Cognitive Development (4, Irregular) Examination of contemporary psychological theory and research on the development of cognitive skills, including language, memory, reading, and mathematics. *Prerequisite:* PSYC 336L.

PSYC 434 Intelligence, Problem Solving and Creativity (4) Psychometric and experimental approaches to the study of intelligence, problem solving, reasoning and creativity, including analysis of mental test construction and validity. *Prerequisite:* PSYC 100 and PSYC 274L.

PSYC 437 Adolescent Development (4, FaSp) The adolescent years from both an applied and a research-oriented perspective. Topics include physical, cognitive, and moral development; socialization; and sexual and sex-role development. *Prerequisite:* PSYC 100.

PSYC 438 Behavioral Genetics (4, Irregular) Inheritance and evolution of behavioral characteristics in man and other species. *Prerequisite:* PSYC 274L.

PSYC 440 Introduction to Cognitive Neuroscience (4, Sp) Introduction to the major components of cognition (perception, memory, intelligence) in terms of the neural coding characteristic of the relevant brain areas. *Prerequisite:* PSYC 100.

PSYC 450L Neural Network Models of Social and Cognitive Processes (4) Introduction to using neural network or connectionist models to simulate cognitive, social, emotional and motivational processes. Introduction of basic concepts and tools in computational neuroscience. *Prerequisite:* PSYC 100; *recommended preparation:* basic knowledge of programming is helpful, but not required.

PSYC 451 Formation and Change of Attitudes (4, Irregular) Effects of socialization, personal influence, propaganda and social structure on private attitudes and public opinion. *Prerequisite:* PSYC 100 and PSYC 355.

PSYC 453 Intergroup Relations (4) Examination of the nature of relations between human groups and the psychological mechanisms relating to intergroup conflict, war, genocide, stereotyping, prejudice, and discrimination. *Prerequisite:* PSYC 355.

PSYC 454 Social Cognition (4, Irregular) Theory and research on cognitive processes in social behavior, to include social inference, cognition and emotion, the Self, social categorization, person memory, and attribution processes. *Prerequisite:* PSYC 100; PSYC 355 recommended.

PSYC 456 Conservation Psychology (4, Fa) Examination of theories, research, interventions regarding psychology of environmental sustainability including cognition, emotion, behavior, attitudes, persuasion, values, social identity, consumerism, and science of happiness. *Prerequisite:* PSYC 100.

PSYC 462m Culture and Mental Health (4, Irregular) The influence of culture, ethnicity, race and gender on human behavior. Mental health issues relevant to ethnic minorities in the U.S. *Recommended preparation:* sophomore standing or higher; PSYC 100.

PSYC 463 Criminal Behavior (4, FaSp) Genetic, biological, psychological, and sociological characteristics of those who evidence criminal behavior; theoretical formulations to be reviewed and appraised. *Prerequisite:* PSYC 100.

PSYC 464 Psychology of Marriage and the Family (4) Theories and research on family relationships across the life span, including research methods, cultural and developmental perspectives, communication, conflict, attachment, individual psychopathology and family violence. *Prerequisite:* PSYC 100.

PSYC 465 Introduction to Forensic Psychology (4, FaSp) Survey of current topics, technologies and techniques. Students acquire a basic understanding of how forensic psychologists contribute their unique expertise to the American legal system. *Prerequisite:* PSYC 100.

PSYC 469 Schizophrenia Research (4, Irregular) Current research on possible causes of schizophrenia. Topics: history, diagnosis, genetics, neural development, obstetrics, psychosocial factors, brain imaging, psychopharmacology, premorbid signs and aging. *Prerequisite:* PSYC 100; *recommended preparation:* read current professional journals related to schizophrenia.

PSYC 480x Senior Honors Seminar (2-4, max 8, Sp) Advanced study of empirical approaches in psychology. Progress presentations and evaluations of Senior Honors Thesis research. In-depth exploration of issues in science. Not available for graduate credit. *Prerequisite:* senior standing in Psychology Undergraduates Honors Program.

PSYC 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

PSYC 499 Special Topics (2-4, max 8, FaSp) Selected topics in the various specialty areas within psychology. Topic will vary from semester to semester. *Prerequisite:* PSYC 100.

PSYC 500L An Overview of Quantitative Methods in Psychology (4) Team taught introduction to analysis of variance, regression analysis, multivariate measurement, and significance testing. Computer laboratory linked to class material using SAS, SPSS, and R. Open only to psychology majors.

PSYC 501L Statistics in Psychological Research (4, Fa) Basic statistical principles and techniques as well as modern improvements on classic inferential methods.

PSYC 502L Analysis of Variance and Experimental Design (4, Sp) ANOVA, including three-way and within groups designs, multiple comparisons, ANCOVA, plus related methods based on robust smoothers and multivariate techniques. *Prerequisite:* PSYC 501L.

PSYC 503L Regression and the General Linear Model (4, Fa) Multiple regression as a tool in experimental and non-experimental data; analysis of variance and covariance as regression on coded variables. Computer applications Laboratory exercises. *Prerequisite:* PSYC 501.

PSYC 504 Research Design (4, Sp) Intensive review of research methods in the behavioral sciences. Problem analysis, formulation of research propositions, and procedures for research inference.

PSYC 505 Research Methods in Applied Social Psychology (4, FaSpSm) Various research techniques that are useful in a variety of different real world settings, such as business, governmental agencies and charities. Open only to Master of Human Behavior students.

PSYC 506 Learning and Cognition (4, Irregular) Survey of learning theory and research, including conditioning and information-processing approaches with human and animal subjects.

PSYC 508 Historical Foundations of Psychology (4, Irregular) History of psychology: clinical, cognitive, developmental, experimental, quantitative, and social; epistemology and philosophy of science as applied to psychology.

PSYC 510 Visual Cognition (4, Irregular) The behavioral, neural, and computational aspects of real-time shape recognition will be examined, along with implications for imagery, reading, concepts, and attention.

PSYC 512 Seminar in Social Psychology (4, max 8, Fa) Problems and theories of the person in the social context. Person perception, interpersonal relations, attitude dynamics, social systems.

PSYC 513 Attitudes and Social Influence (4, FaSpSm) Current theories of attitudes and behavior, measurement, attitudes as predictors of behaviors, effects on changing attitudes and behavior. Open only to Master of Human Behavior students.

PSYC 514 Psychopathology (4, Fa) Study of psychopathology: in-depth survey of theory and research concerning psychological disorders; introduction of diagnosis. (One of three clinical psychology core courses: PSYC 514, PSYC 515, PSYC 619.)

PSYC 515 Clinical Assessment (4, Fa) Study of clinical assessment: test construction, measurement and prediction of behavior, major cognitive and personality assessment instruments. (One of three clinical psychology core courses: PSYC 514, PSYC 515, PSYC 619.)

PSYC 517 Group Dynamics and Leadership (4, FaSpSm) Theory and research on effective teams and characteristics of strong leaders. Negotiation, morale-building, managing expectancies, utilization of cultural diversity as a strength. Open only to Master of Human Behavior students.

PSYC 520 Fundamentals of Psychological Measurement (4) Factor analysis; latent variable; scaling; test construction; classical true score reliability model; generalizability theory; validity; decision theoretic approaches to selection; item analysis; item response theory.

PSYC 524 Research Design in Developmental Psychology (4, Irregular) Review and practice in the analysis and design of experimental and quasiexperimental paradigms for research on ontogenetic age changes and generational differences in behavior.

PSYC 533 Cognitive Development in Children (4, Sp) Review of theories of cognitive development. Analysis of research on brain functioning, perception, memory, language, reasoning and academic skills from birth to adolescence. Open to graduate students in psychology.

PSYC 534 Social and Emotional Development in Children (4, Fa) Theories of social and emotional development, including sociocultural perspectives. Analysis of research on temperament, social relationships, individuation and moral development from birth to adolescence. Open to graduate students in psychology.

PSYC 538 Origins of Human Nature (4) Exploration of the evolutionary and developmental origins of human nature. Topics include navigation, object and number cognition, culture, sexual behavior, cooperation, language, and morality.

PSYC 540 Cognitive Neuroscience (4, Sp) An examination of the major components of cognition (e.g., perception, memory, intelligence) in terms of the neural coding characteristic of the relevant brain areas.

PSYC 544 Psychophysiology (4, max 8, Irregular) Recent research on relations between basic psychological states (e.g., cognition, learning, emotion) and physiological response processes (e.g., autonomic responses, covert muscle activity).

PSYC 545 Neuropsychology (4, Irregular) Brain mechanisms underlying perceptual and cognitive functioning: brain damage, loss of function, and clinical assessment.

PSYC 546 Current Topics in Cognitive Neuroscience (4, max 8) Analysis of selected, recent advances of perception, memory, attention, and conceptualization, as revealed by neuroimaging; behavioral, drug, primate single-unit studies; cognitive deficits and evolutionary perspectives. *Recommended preparation:* some background in behavior science, neuroscience, or computational science.

PSYC 547 Functional Neuroanatomy (4, Irregular) Regional organization and systems of the mammalian nervous system and their functions.

PSYC 550ab Proseminar in Human Behavior (a: 4, Fa, b: 4, Sp) The nature of the human mind, social interactions, conflicts, cooperative behavior, mutual influence and effectiveness. Application of psychological principles to the dynamics of commercial entities. Open only to MHB students.

PSYC 551 Decision Neuroscience (4) Neuroscientific studies attempting to understand the neural basis of judgment and decision-making, social behavior, and market economies. *Recommended preparation:* PSYC 547.

PSYC 552 Principles of Consumer Psychology (4) Examination of the attitudes and decisions of consumers, and how to effectively reach consumers by using persuasion and proper positioning in the marketplace. Open only to M.H.B. students.

PSYC 555 Introduction to Functional Magnetic Resonance Imaging (4, FaSp) The physical and physiological bases of MRI and fMRI. Design and analysis of fMRI experiments. Operation of a magnetic resonance imaging system.

PSYC 556 Psychology of Interactive Media (4) Examination of the diverse methods of communicating with a target audience with a special emphasis on the newest computer-based tools for providing information and influence. Open only to M.A., Communication; M.C.M.; and M.H.B. students.

PSYC 574 Topics in Engineering Approaches to Music Cognition (3, max 6) (Enroll in ISE 575)

PSYC 575L Multivariate Analysis of Behavioral Data (4, Irregular) Multivariate statistical models and contemporary computer methods in multiple regression, multivariate analysis of variance, factor analysis, canonical correlation, repeated measures analysis, and structural equation modeling. *Prerequisite:* PSYC 500L.

PSYC 576 Psycholinguistics (3, Fa) (Enroll in LING 576)

PSYC 577 Analysis of Covariance Structures (4, Irregular) Multivariate analysis of non-experimental data, including structural equation modeling, path analysis, and confirmatory factor analysis. Computer applications using variety of optimization routines and purpose-written software. *Prerequisite:* PSYC 503.

PSYC 578 Workshop in Quantitative Methods (4, max 8) Practical, hands-on experience in the application of selected quantitative methods to empirical data. Includes training in use of relevant computer software. *Prerequisite:* PSYC 501 and either PSYC 502 or PSYC 503.

PSYC 586 Advanced Psycholinguistics (3, max 9) (Enroll in LING 586)

PSYC 590 Directed Research (1-12, FaSp) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PSYC 591 Internship (2-8, max 8, FaSpSm) Internship in a non-university setting, such as business, governmental agency, or NGO. Graded CR/NC. Open only to MHB students.

PSYC 592 MHB Treatise (2) Requires a research paper of substantial length and high quality that integrates the Internship experience with concepts and principles of human behavior. Graded CR/NC. Open only to MHB students.

PSYC 593 Practicum in Teaching the Liberal Arts (2, FaSp) (Enroll in MDA 593)

PSYC 594abz Master's Thesis (2-2-0, FaSp) Credit on acceptance of thesis. Graded IP/CR/NC.

PSYC 595 Practicum in Clinical Psychology (1-4, max 12, FaSp) Supervised experience in interviewing skills and assessment, including psychological test administration and the preparation of reports. Graded CR/NC.

PSYC 599 Special Topics (2-4, max 8) Selected topics in the various speciality areas within psychology at the graduate level. Topic will vary from semester to semester.

PSYC 606 Seminar in Learning and Memory (4, max 8, Irregular) Basic problems and experimental data related to understanding the nature of learning processes.

PSYC 607 Seminar in Behavioral Neuroscience (4, max 8, Irregular) Selected topics considered in the contexts of recent experimental developments and current theoretical trends.

PSYC 610 Seminar in Information Processing in the Nervous System (4, max 8, Irregular) Current issues in research on short term retention, recognition, and recall; sensory filtering and attention; information processes in human skill; limits of capacity.

PSYC 612 Seminar in Advanced Social Psychology (4, max 16, Irregular) An intensive consideration of selected concepts, theories, and research problems in social psychology. *Prerequisite:* PSYC 512.

PSYC 616 Research Techniques for Non-Experimental Social Science (4, Irregular) Quasi-experimental designs; causal inference from correlational research, techniques for evaluating measures of attitude, personality, and social motives: observational methods; content analysis; sampling and survey techniques.

PSYC 619 Psychological Intervention (4, Sp) Study of clinical psychological treatment: research and theory about major psychological approaches to intervention. (One of three clinical psychology core courses: PSYC 514, PSYC 515, PSYC 619.)

PSYC 621 Seminar in Quantitative Psychology (4, max 12, Irregular) Selected topics in mathematical psychology.

PSYC 622 Decision Analysis and Behavioral Decision Theory (4, Irregular) Normative and descriptive theories and research on human decision-making, with special emphasis on applications to real social decision problems.

PSYC 660 Seminar in Clinical Psychology (4, max 8, Irregular) Selected topics in clinical psychology.

PSYC 663 Computational and Cognitive Neuroscience (4) (Enroll in CSCI 663)

PSYC 676 Seminar in Psycholinguistics (3, max 12) (Enroll in LING 676)

PSYC 680 Seminar in Psychopathology (4, max 8, Irregular) Selected topics in psychopathology.

PSYC 691ab Internship in Clinical Psychology (0-0, FaSp) Supervised clinical work in an approved mental health setting. Graded CR/NC. *Prerequisite:* good standing in clinical program and departmental approval.

PSYC 695 Advanced Practicum in Clinical Psychology (1-4, max 12, FaSp) Didactic practicum combining theory and research on psychological intervention with clinical practice in assessment and treatment, focused on particular client groups or disorders. Graded CR/NC.

PSYC 790 Research (1-12, FaSp) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PSYC 794abcdz Doctoral Dissertation (2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC.

Religion

Ahmanson Center 130
(213) 740-0270

FAX: (213) 740-7158

Email: religion@dornsife.usc.edu
dornsife.usc.edu/religion

Director: Duncan Williams, Ph.D.

Faculty

Myron and Marian Casden Directorship of the Casden Institute for the Study of the Jewish Role in American Life and Professor of Religion: Bruce Zuckerman, Ph.D.*

King Faisal Chair in Islamic Thought and Culture and Professor of Religion and American Studies and Ethnicity: Sherman Jackson, Ph.D.*

Knight Chair in Media and Religion: Diane Winston, Ph.D. (*Communication and Religion*)

John R. Tansey Chair in Christian Ethics and Professor of Religion: Rev. Cecil (Chip) Murray, Rel.D.

Alton M. Brooks Professor of Religion: James Heft, Ph.D.

Leonard K. Firestone Professor of Religion: Donald Miller, Ph.D.

Professors: Lisa Marie Bitel, Ph.D. (*History*); Ronald R. Garey, Ph.D., J.D. (*Law*); Paul Lichterman, Ph.D. (*Sociology*)

Associate Professors: Sheila Briggs, M.A.; Lori Rachelle Meeks, Ph.D. (*East Asian Languages and Cultures*); Duncan Williams, Ph.D.

Assistant Professors: David Albertson, Ph.D.*; James McHugh, Ph.D.; Megan Reid, Ph.D.

Lecturer: Lynn Swartz Dodd, Ph.D.

Adjunct Professors: Katharine Harrington, Ph.D.; Stephen Smith, Ph.D.; Varun Soni, Ph.D.

Emeriti Professors: Robert Ellwood, Ph.D.; Gerald A. Larue, Th.D.; John B. Orr, Ph.D.; J. Wesley Robb, Ph.D., LHD*

Emeriti Associate Professors: John P. Crossley, Jr., Th.D.*; William W. May, Ph.D.; Alvin S. Rudisill, Ph.D.

**Recipient of university-wide or college teaching award.*

The School of Religion offers undergraduate courses in biblical studies; ancient near eastern religion, east and south Asian religions, including Hinduism, Buddhism and Taoism; religions in Latin America; contemporary North American religions; the histories of Judaism, Christianity and Islam; the sociology of religion; religion and gender; and topics in religious ethics. Courses are designed to facilitate a critical and comparative understanding of religious traditions in the light of the most current scholarship.

Students also have the opportunity to receive regular USC course credit for courses taken at Hebrew Union College. Students have the option to take occasional courses at Hebrew Union College or to declare an emphasis in Judaic Studies (see the requirements indicated below for more information).

Degree Programs

The School of Religion offers the Bachelor of Arts in Religion, the Bachelor of Arts in Interdisciplinary Archaeology, a Bachelor of Arts with an emphasis in Judaic Studies, a minor in religion, a minor in interdisciplinary archeology, an M.A. and Ph.D. in Religion and Social Ethics, a joint Ph.D. with Hebrew Union College, and a dual degree with the USC Gould School of Law.

Undergraduate Degrees

Major Requirements for the Bachelor of Arts in Religion

The department major requires REL 301 Introduction to the Study of Religion (preferably taken at the beginning of the student's major courses) and REL 401 Seminar in Religious Studies. Further, students will select one or two lower-division courses and four or five additional upper-division courses from the lists below. The total unit requirement for the major is 32 units (at least 24 to 28 units must be upper-division).

Lower-division Options: REL 111, REL 112, REL 121, REL 125, REL 131, REL 132, REL 133, REL 134, REL 135x, REL 136x, REL 137, REL 140, REL 150

Upper-division Options: CLAS 323, COMM 425, COMM 426, EALC 431, HIST 482, JS 321, JS 361, JS 382, JS 467, REL 311, REL 312, REL 315, REL 316, REL 317, REL 319, REL 325, REL 329, REL 330, REL 331, REL 332, REL 333, REL 334, REL 335, REL 336, REL 339, REL 341, REL 360, REL 364, REL 366, REL 375, REL 394, REL 414, REL 415, REL 417, REL 433, REL 435, REL 440, REL 442, REL 455, REL 460, REL 461, REL 462, REL 468, REL 469, REL 471, REL 473, REL 474, REL 479, REL 481, REL 483, REL 493, REL 494, REL 495, REL 499

Students who intend to do graduate work in some area of religious studies are encouraged to concentrate their course selections in the area of their preference and to begin learning the languages that are essential for study in that area. This includes modern languages such as French, German, Chinese or Japanese, and perhaps an ancient language.

Religion Major with Honors

Majors who wish to graduate from the university with honors in religion must achieve a minimum 3.5 grade point average in the major at the time of graduation. In addition to completing the required 32 units listed above, candidates for honors must register for REL 491x Undergraduate Honors Research, in which they must complete an acceptable senior honors project in religion. The total unit requirement to graduate with honors is 36 upper-division units.

Honor Society

Theta Alpha Kappa is a national honor society for those involved in the study of religion at the undergraduate and graduate level. It is open to declared majors who have completed at least three semesters of college and at least 12 units of religion courses. Students must have a GPA of at least 3.5 in major courses and an overall GPA of at least 3.0.

Judaic Studies Emphasis Major

A Bachelor of Arts in Religion with an emphasis in Judaic Studies is offered cooperatively with the School of Religion and Hebrew Union College-Jewish Institute of Religion. Students will complete all requirements for the bachelor of arts in religion. In fulfilling these requirements, students who choose the Judaic Studies emphasis will select any three of the following courses: REL 312; JS 321, JS 361, JS 382, JS 467.

As a prerequisite for participation in the Judaic Studies emphasis, students must enroll in either JS 100 Jewish History or JS 180 Introduction to Judaism. In addition, students who elect the Judaic Studies emphasis must complete HEBR 120, HEBR 150, and HEBR 220, which may be used to fulfill the college's language requirement.

The total number of units to graduate with the Judaic Studies emphasis major is 36 units. This does not include the Hebrew language requirement.

Bachelor of Arts in Interdisciplinary Archaeology

Director: Lynn Swartz Dodd, Ph.D.

Students are given broad-based exposure to a range of methods by which archaeological data are retrieved and analyzed and theoretical paradigms and intellectual foci by and from which archaeologists interpret the past's material culture.

In addition to the general education requirements, the following courses are required:

REQUIRED COURSES, LOWER-DIVISION		UNITS
ANTH 202	Introduction to Archaeology, or	4
CLAS 212L	Archaeology: Interpreting the Past	
AHIS 201	Digging into the Past: Material Culture and the Civilization of the Ancient Mediterranean, or	4
LING 295	The Ancient Near East: Culture, Archaeology, Texts	
Total lower division units		8
REQUIRED COURSES, UPPER-DIVISION		UNITS
<i>Theory and Methods</i>		8
(any two of the following three courses)		
AHIS 425	Interdisciplinary Studies in Classical Art and Archaeology: Research and Methodology	4
REL 494	Advanced Near Eastern and Mediterranean Archaeology	
REL 495	Field Methods and Theories in Archaeology	
<i>Interdisciplinary Perspectives</i>		4
AHIS 321	Greek Art and Archaeology, or	
AHIS 322	Roman Art and Archaeology, or	4
AHIS 384	Early Chinese Art, or	
AHIS 420	Studies in Ancient Art	4
ANTH 310	Archaeology of the Americas, or	
ANTH 311	Old World Archaeology	4
CLAS 323	Aegean Archaeology	
REL 394	Archaeology of Egypt and the Near East, or	4
REL 493	Art and Archaeology of Religion	
Elective	Any 300- or 400-level course offered by the Anthropology, Art History, Classics, Linguistics or Religion departments	4
<i>Capstone course</i>		4
CLAS 465	Archaeology and Society	
Total upper-division units		32

Minor in Interdisciplinary Archaeology

The minor in interdisciplinary archaeology is available to students in all schools and departments.

Archaeologists interpret material culture and action in our shared human past using a range of tools and approaches. Archaeology deepens our understanding of peoples and societies across space and time, in all parts of the world, while expanding our knowledge of issues relevant in contemporary society.

Archaeology minors strengthen their skills in critical thinking, assessing evidence, and formulating clear and persuasive arguments, both oral and written. Students from a wide range of disciplines will gain perspective on their own intellectual and professional interests through the study of the past.

LOWER-DIVISION REQUIREMENTS (4 UNITS)

Choose one course (4 units) from:

AHIS 120, AHIS 125, AHIS 126, AHIS 127, AHIS 128, AHIS 201, ANTH 200L, ANTH 202, CHEM 105bL*, CLAS 150, CLAS 151, CLAS 212L, ENST 100, ENST 150X, HIST 101, LING 295, MASC 110L, REL 111, REL 112, REL 121, REL 135X, SSCI 265L

UPPER-DIVISION REQUIREMENTS (16 UNITS)

All students shall be required to take at least one Archaeological Theories and Methods course. Beyond this, students may elect to take either:

A: one additional upper-division course from the Theories and Methods list and two upper-division courses from the Interdisciplinary Perspectives list, or

B: one upper-division course from the Interdisciplinary Perspectives list and two upper-division courses from the Interdisciplinary Applications list.

Theories and Methods Courses: AHIS 325, AHIS 415, AHIS 425, AHIS 427, REL 494, REL 495

Interdisciplinary Perspectives Courses: AHIS 321, AHIS 322, AHIS 381, AHIS 384, AHIS 420, ANTH 300, ANTH 304, ANTH 308, ANTH 310, ANTH 311, ANTH 314, ANTH 329, ANTH 337, CLAS 323, CLAS 324, CLAS 328, CLAS 349, CLAS 465, JS 378, REL 302, REL 394, REL 402, REL 475, REL 493

Interdisciplinary Applications Courses: ANTH 376, ANTH 481L*, CHEM 300L*, ENST 320ab, GEOL 305LX, GEOL 320L*, GEOL 412, SSCI 301L, SSCI 382L*, SSCI 483L*

*Prerequisite required

Total requirements: 5 courses (20 units)

Religion Minor

Students taking the religion minor must enroll in REL 301 Introduction to the Study of Religion. In addition, they must complete one lower-division course and three upper-division courses selected from those listed in the religion major requirements. The total unit requirement for the minor is 20 units; 16 of those units must be upper-division.

Students who wish to focus their minor in Jewish studies must minor in Judaic Studies.

Judaic Studies Minor

See Judaic Studies, page 386xx, for a full description of the minor.

Critical Approaches to Leadership Minor

See the Department of Interdisciplinary Studies, page 375xx for a full description of the minor.

Graduate Degrees

The School of Religion offers graduate study at the master's and doctoral degree levels in the field of religion and social ethics. Graduate work in religion and social ethics is designed to develop critical reflection upon problems of norms, values, social institutions and specific social issues within the framework of theological, philosophical and social scientific disciplines.

Graduate study in religion and social ethics is divided among three areas of concentration:

Area I. Religious and Philosophical Approaches to Social Ethics: Studies the formation and historical development of social ethical traditions as they grow out of religious and philosophical commitments. Attends especially to such issues as the relationship of religious faith to the moral life, the relationship between religious and philosophical ethics, foundational and non-foundational perspectives on social ethics, ethical absolutism and ethical relativism, and religious and philosophical visions of a just society.

Area II. Religion and Culture: Focuses on the social and cultural contexts, both ancient and modern, within which religious faith and moral character develop and religious and moral decisions are made. Concerns itself with such issues as the role of institutions in mediating religion, community, human services, and perceptions of the good life and good society; how the religious and moral character of individuals and groups is formed in particular social and cultural contexts; and how and why norms and values change. Makes use of field studies and other empirical research methods.

Area III. Ethical Analysis and Policy Formation: Develops the capability to make sound judgments about ethical issues and to relate these judgments to policy formation. Relates theological, philosophical, legal and social scientific theories and methods to the analysis of questions of justice and rights in society. Special emphasis is given to ethical issues in medicine, business and the impact of technology on society and culture. Utilizes the case study method along with more traditional models of decision-making, goal-setting and the devising of strategies for positive social change.

Degree Requirements

These degrees are under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue (page 97xx) for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School. Decisions regarding the number of transfer credits to be awarded will be made on a case-by-case basis by the faculty of the School of Religion.

Core Course Requirement

General Requirements

Doctoral students are expected to take three core courses, one in each of the three areas of concentration: Area I, 507 Social Ethics; Area II, REL 531 Sociology of Religion; Area III, REL 560 Normative Analysis of Issues. Master's students are expected to take two of the core courses offered during their year of residency. At least one core course is offered each semester. Students are expected to take one core course each semester until the core requirement is met.

Normal Load

A normal, full-time load is two or three courses (eight or 12 units) each semester.

Master of Arts in Religion and Social Ethics

The M.A. degree program consists of 24 units of graduate-level course work and either a comprehensive examination or a thesis. A maximum of one third of the 24 units may be taken at the 400 level. No foreign language is required for the master's degree.

Master's degree students are expected to take two of the core courses offered during their year of residency and four additional elective courses for a total of six courses. The comprehensive examination consists of two half-day, four hour examinations, primarily in the areas of two of the core courses offered in the year of a student's residency, but with some attention to the third area. The master's degree with comprehensive examination option may be completed in two semesters of full-time work (12 units each semester). The thesis option requires research on a specific topic and requires registration in REL 594ab Master's Thesis in addition to the 24 units of required course work.

Doctor of Philosophy in Religion and Social Ethics Course Requirements

Sixty units of course work are required for the Ph.D. degree, including units of previous graduate work for which credit is allowed. Since students normally complete between 16 and 20 units a year, three years are required to complete the course work for students who have done no previous graduate study. Time of residency is contingent upon the background and preparation of the student.

In addition to the 12-unit core requirement, each student is required to take four elective units in each area of concentration. Students are also expected to take courses in areas which will support their dissertation work. Such courses may be offered in related departments in the university as well as in the School of Religion and should be selected in consultation with an adviser.

A maximum of eight units of 794 Doctoral Dissertation may be applied toward the 60 unit total requirement. A 3.0 GPA must be maintained in course work. Students are screened by a faculty committee after completion of 20 units (16 units for transfer students), and advised as to whether they should continue with the Ph.D. program.

Students with deficient backgrounds in the history of ethics are urged, after consultation with their advisers, to take one of the following three courses: PHIL 442 History of Ethics to 1900, REL 500 History of Theological

Ethics or REL 504 Ethics in the History of Western Religious Thought.

Foreign Language Requirement

The School of Religion requires a reading knowledge of one modern foreign language. The student should pass the language examination by the end of the first full year of residency. The language requirement must be met before a student will be permitted to take the qualifying examination.

Qualifying Examination

A student is admitted to candidacy for the Ph.D. degree when the qualifying examination is successfully completed. The qualifying examination consists of five separate examinations: (a) three, three-four hour examinations in each of the three areas of concentration based on a combination of core bibliographies available for each area and student bibliographies. The Area III examination is a case study that deals directly with an issue that requires discussion of rights and justice, utilizes decision-making models and results in policy formation; (b) a three-four hour examination in the area of the student's special interests and/or dissertation area; (c) a two-hour oral examination in which the student is questioned about the written examinations.

Students whose preparation for the dissertation could be facilitated by a case study more extensive than is feasible for a three-four-hour in-house examination may avail themselves of the following option: Instead of taking the Area III examination (case study) and the special interest area examination as two separate examinations, students may collapse the two into a 72-hour, take-home case study in the dissertation area.

Upon successful conclusion of the qualifying examination, the student immediately forms a dissertation committee, and submits to the dissertation committee within one month a 10–12 page dissertation proposal. The dissertation committee discusses the proposal with the student, suggests necessary alterations and additions, and bibliography, and requires the student to submit a final proposal for approval within one month.

Dissertation

The final stage of the program is the submission of an acceptable dissertation based on original investigation. The dissertation must show technical mastery of a special field, evidence of independent research, and the analytical and interpretive ability expected of a scholar.

Joint Doctor of Philosophy Program in Religion and Social Ethics with Hebrew Union College — Jewish Institute of Religion

In conjunction with Hebrew Union College — Jewish Institute of Religion, the Ph.D. Program in Religion and Social Ethics may be taken with a concentration in Judaic Studies. Applicants should apply to USC; applications will be considered jointly with Hebrew Union College. Individual programs may be developed within the parameters for religion and social ethics set forth above.

Dual Degree Program in Law and Religion and Social Ethics

The School of Religion, in conjunction with the USC Gould School of Law, offers a dual degree in law and

religion and social ethics. The goal of this program is to provide the highest level of education and academic preparation to students committed to both disciplines. Students completing this program will be fully prepared to function as practicing lawyers, as well as to teach. Requirements for this dual degree are listed in the law school, page 741xx. To earn the J.D., all students (including dual degree students) must complete 35 numerically graded law units at USC after the first year. The associate dean may make exceptions to this rule for students enrolled in law school honors programs.

Professional Ethics

Students interested in bioethics, business ethics or professional ethics may develop an area of concentration in one of these fields. These fall under Area III.

Courses of Instruction

RELIGION (REL)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

REL 111g The World of the Hebrew Bible (4) The Hebrew Bible in the cultural setting of the Ancient Near East; the formation of theological and ethical concepts which have shaped Western culture.

REL 112g Religions of Egypt and the Ancient Near East (4) Religions, cultures, and values of ancient Egypt and Near East (Iran, Iraq, Israel, Syria, Lebanon, Arabia, Turkey) and their legacies in contemporary society.

REL 121g The World of the New Testament (4) Historical investigation of New Testament characters, events, ethics and theology in relation to its social, intellectual, and religious contexts in the Jewish and Greco-Roman world.

REL 125g Introduction to Christianity (4) Survey of the changing beliefs and practices of the Christian religion from obscure origins to globalized present, with special attention to the varieties of Christian literature.

REL 131g Religions of Asia (4) Traces the development of religious thought in India, China and Japan, from earliest times to the present, paying attention to certain recurrent themes or motifs.

REL 132g Religions of the West (4) Examination of Judaism, Christianity, and Islam in their origins and their development in relation to Western civilization.

REL 133g Religions of Latin America (4) Examines the diverse and complex religious traditions of Latin America.

REL 134gx Introduction to Buddhist Literature (4) Focus primarily on works of Buddhist literature written in a variety of genres. Introduction of basic teachings that link Buddhist traditions across time and space.

REL 135gx Religions of China (4) Historical and thematic survey of Chinese religious history from earliest times to the present.

REL 136xg Sense and Sensuality in Indian Religious Literature (4) Exploration of the senses and the technologies of pleasure in India, relating this material to some fascinating examples of Hindu, Jain, and Buddhist literature. Not for major credit for Religion or Religion (Judaic Studies) majors.

REL 137g Introduction to Islam (4) Introduction to Islam, emphasizing its historical and cultural development since the seventh century C.E., and the basic teachings of Islam.

REL 140g Religion and Ethical Issues (4) How major Western religious orientations affect deliberation concerning issues such as reproductive technologies and abortion, physician-assisted death, civil disobedience, homosexuality, economic justice, and just war. *Concurrent enrollment:* WRIT 140.

REL 150g Religion and Immigration (4) Study of social and cultural consequences of immigration through the lens of religion. *Concurrent enrollment:* WRIT 140.

REL 301 Introduction to the Study of Religion (4, Fa) Analysis of alternative paths to spirituality, survey of major critics and interpreters of religious commitment. Majors should take at beginning of major course work.

REL 302 Religions of Ancient Egypt and the Near East (4) Religious experience and values of ancient Egypt and Near East through material culture, literature, art, and cultic practices; and their legacies in contemporary society.

REL 311 The Bible in Western Literature (4) Comparative analysis of biblical works and how they were employed by various writers in major works of Western literature.

REL 312 Biblical Wisdom Literature (4) Survey of and inquiry into the biblical wisdom literature; emphasis on the Book of Job.

REL 315 Thought and Life of Islam (4) History, thought, institutions, and religious practices of Islam.

REL 316 Women and the Islamic Tradition (4, Fa) Overview of social and legal status of women in Islamic society, past and present. Examination of social roles established both for and by Muslim women.

REL 317 Ancient Near Eastern Myth and Literature (4) A close consideration of ancient Near Eastern myths — especially those from Mesopotamia and Canaan — with special attention to their influence on the Bible.

REL 319 Religious and Ethical Issues in Death and Dying (4) Analysis of religious and ethical approaches to death and dying, including refusal of treatment for competent and incompetent patients, voluntary and involuntary euthanasia, and resuscitation.

REL 323 Aegean Archaeology (4) (Enroll in CLAS 323)

REL 325 Religious Experience in the Greco-Roman World (4) Varieties of religious experience as reflected in the literature, art, and cultic practices of the Hellenistic world.

REL 328 Archaeology of Religion in the Greco-Roman World (4) (Enroll in CLAS 328)

REL 329 Themes in the Religions of China (4) A study of selected themes in the history of Chinese religions and culture. Compares cases and materials from several historical periods and religious traditions.

REL 330 Introduction to the Religions of India (4, FaSpSm) History, teaching, and practice of Hinduism, Buddhism, and other religious traditions of India.

REL 331 Religions of East Asia (4) History, teaching, and practice of the religions of China, Tibet, and Japan.

REL 332 Religions of Japan (4) The development of religious thought and practice in the Japanese islands, with Buddhism and Shinto being the most prominent.

REL 333 Religion in the Borderlands (4) Survey of religious history of U.S./Mexico borderlands. Emphasis is given to definitions of place and transformations in culture and forms of belief.

REL 334 Religion and Colonial Encounter (4) Survey of religious responses to colonial encounter in the Americas. Emphasis given to study of religious innovations of Amerindians, Africans, and Europeans.

REL 335 Gender, Religion, and Sexuality (4) The construction of gender and sexuality in Western religious traditions; its continued impact on contemporary intellectual, cultural, and social life.

REL 336 Re-viewing Religion in Asian America (4) Interdisciplinary analysis of the religions traditions, institutions, and experiences of Asians and Pacific Islanders in the U.S.

REL 337 Islam in Black America: From Slavery to Hip Hop (4) (Enroll in AMST 337)

REL 338 Mysticism and Religious Desire (4) How human appetites for sex, food, community or immortality are articulated as mystical desires in different religions, either within institutional structures or working against them.

REL 339 Studies in the History of Christianity (4) In-depth exploration of one of the pivotal moments in the history of Christianity and Western society.

REL 340 Introduction to Indian Philosophy (4) An introduction to Indian philosophy, including major schools of thought in Hindu, Buddhist, and Jain philosophies. No previous knowledge of Indian religions or philosophy required.

REL 341 Technology, Culture, and Ethics (4) Examination of value questions arising from the impact of technology on individuals, social institutions, and culture.

REL 344 Islamic Law and American Society (4) (Enroll in AMST 344)

REL 360 Ethical Issues in the New Medical Revolution (4) Multimedia-oriented analysis of issues; definition of life and death; research on human subjects, health care delivery, euthanasia, abortion, genetic counseling, behavior control.

REL 364 Religion and Ethics (4) Traces the development of how religious ideas have informed ethics, or accounts of the good life, including notions of justice, righteousness, virtue, duty, charity and happiness.

REL 366 Religion and Social Change (4) Empirical and theoretical analysis of social change and its effect on religious institutions as well as the impact of religious movements on society.

REL 370 Religion and Visuality (4) Examination of the deep connections between visibility and religions, including visions, controversies over religious images, and other connections between religion and visual art.

REL 375 Conflict and Change and the Ethics of Business (4) Impact of recent events and developments on the ethics of business, such as civil rights, affirmative action, professionalism, consumerism, ecology, changing life styles, and government regulation.

REL 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

REL 394 Archaeology of Egypt and the Near East (4) Study of archaeology and excavated artifacts from Egypt and the Near East.

REL 401 Seminar in Religious Studies (4, Sp) Survey of methods and selected issues in the field of religious studies; required of all majors during their junior or senior year. (Duplicates credit in former REL 399.) *Recommended preparation:* REL 301.

REL 402 Cultural Heritage, Religion, and Politics in the Middle East (4, Fa) In-depth exploration of archaeology and heritage issues in the Middle East and their implications for politics and practice in modern Islam, Judaism and Christianity.

REL 414 History of Islamic Law (4, Sp) Examines legal methods and religious sources used in Islamic law. Emphasis is placed on the way cultural developments affect legal thought and the administration of justice.

REL 415 Seminar in Buddhism (4) Seminar on selected aspects of the Buddhist tradition.

REL 417 Seminar in South Asian Religions (4) Exploration of particular themes and/or traditions in South Asian religions.

REL 425 Communicating Religion (4) (Enroll in COMM 425)

REL 426 Religion, Media and Hollywood: Faith in TV (4) (Enroll in COMM 426)

REL 431 The Taoist Tradition (4) (Enroll in EALC 431)

REL 435 Religious Thought After the Enlightenment (4) Changes in religious thought between the late 18th and early 20th centuries in the wake of the emergence of modernity in the West.

REL 440 Christian Thought in the 20th Century (4) Examination of dynamic new directions taken by Christian understandings of self, God, and salvation in response to the novel conditions of modern culture, politics and philosophy.

REL 441 Origins of Modern Theology (4) 19th century liberal, rationalist, and historical theology.

REL 442 Religion and Science (4) Explores whether religion and science offer competing or complementary models for understanding the world and the human place within it.

REL 448m Islam in France (4, FaSp) (Enroll in FREN 448m)

REL 455 Philosophy of Religion: Bases of Belief and Disbelief (4) Rational and empirical foundations for religious faith and for skepticism.

REL 460 Senior Seminar: Medical Ethics (4) Analysis of ethical problems related to new developments in medical science. Graded CR/NC.

REL 461 Business and Society (4) Theories of corporate social responsibility from contrasting points of view and the relation of social responsibility to theories of management ethics, utilizing case studies.

REL 462 Religion and Violence (4) Religious and moral perspectives on war, pacifism, violent and non-violent protest, and religion-based terrorism and militia.

REL 468 Sociology of Religion (4) The role of religion in modern society from the standpoint of sociological theory and research.

REL 469 Black Religion in America (4) Historical, sociological, and theological analysis of the nature and role of black religion in the American setting.

REL 471 Jesus (4) A study of major interpretations of the figure of Jesus, with focus on the interaction between religious traditions and culture.

REL 473 Advanced Hebrew Bible Studies (4) Consideration of specific topics in Old Testament studies; particular topics determined each semester.

REL 474 Advanced New Testament Studies (4) Consideration of specific topics in New Testament studies. Particular topics determined each semester.

REL 475 Religion, Material Culture and the Senses (4) A comparative study of the role of material culture and the senses in religions based on a number of case studies and problem sets.

REL 479 Seminar in Christian Thought (4) Studies a theme, period, or problem from the history of Christian thought within its intellectual and social context.

REL 481 History of Religion in America (4) Intellectual, institutional, and social history of religion in America from colonial times to the present.

REL 482 Jesus in American History and Culture (4) (Enroll in HIST 482)

REL 483 Religion and Popular Culture in the United States (4, Sp) Critical analysis of the relationship between religion, mass media, and popular cultural forms in the U.S. *Recommended preparation:* REL 301.

REL 484 American Religion, Foreign Policy and the News Media (4, Sp) (Enroll in JOUR 484)

REL 490x Directed Research (1-8, max 12) Individual research and readings. Not available for graduate credit.

REL 491x Undergraduate Honors Research (4) Individual research for honors in the major leading to a substantial project. Open only to religion majors at the junior or senior level.

REL 493 Art and Archaeology of Religion (4, FaSp) The history of religion through its material expression: art, architecture and artifact. Exploration of different themes and time periods.

REL 494 Lab Methods and Theories in Archaeology (4) Archaeological research design, data recovery, artifact analysis, interpretation and analogy, publication and ethics.

REL 495 Field Methods and Theories in Archaeology (4, max 12, FaSpSm) Archaeological field study emphasizing current paradigms of data collection and evaluation; social scientific study of material culture and its relationship to religious expression.

REL 499 Special Topics in Religion (2-4, max 8) Selected topics in religious studies.

REL 500 History of Theological Ethics (4) The ethical thought of major theological thinkers in the patristic, medieval, Reformation, and modern periods.

REL 501 Theories and Methods in Religious Ethics (4) Classical and contemporary writers on the interpretation of religious ethics. Perspectives from the history, phenomenology and the social scientific study of religious ethics.

REL 503 Theories of Rights and Justice (4) Naturalist, utilitarian, contractarian, and Marxian conceptions of rights and distributive justice; their history and contribution to contemporary social ethics.

REL 504 Ethics in the History of Western Religious Thought (4) Ethics in the thought of key religious thinkers in Judaism, Christianity, and Islam from the first to the 19th centuries.

REL 505 Contemporary Theological Ethics (4) The current state of Reformation and Catholic ethics in comparison with current theological ethics influenced by the Enlightenment.

REL 506 Tradition and Community in Western Religious Thought (4) Analysis of how religious identity has been formed in Western history through the definition of tradition and community.

REL 507 Social Ethics (4) Major traditions of religious social ethics in the U.S. in their development from European antecedents to their current states. *Prerequisite:* graduate standing.

REL 508 Ethics of Liberation Theology (4) Analysis of a major movement in contemporary theological ethics in its societal context and relationship to the institutional church and traditional Christian ethics.

REL 509 Early and Medieval Religious Thought in the West (4) Religious thought in the West from pre-Augustine to post-Thomas Aquinas. Emphasis on primary texts: Augustine, Boethius, Anselm, Averroes, Maimonides, and Thomas.

REL 510 Biblical Ethics — Old Testament (4) Old Testament ethics, with emphasis on the historical, institutional, and literary context.

REL 512 Biblical Ethics — New Testament (4) New Testament ethics, with emphasis on the historical, institutional, and literary context.

REL 515 Comparative Religious Ethics (4) A comparative study of ethical thought and practice in cultures and of persons shaped by the major world religions.

REL 516 Modern Continental Religious Thought (4) The effects of the Enlightenment on Jewish, Catholic, and Reformation thought of the 19th century, and of the latter on 20th century religious thought.

REL 520 The Christian Pragmatism of Reinhold Niebuhr (4) Examination of Niebuhr's life and writings, critical analysis of significance regarding social gospel, Neo-orthodoxy, Marxism, New Deal, World War II, and the Cold War.

REL 530 Social Theory in Religious Social Ethics (4) Relationship of sociological theory and methodology to the normative analysis of social institutions, social policy, and cultural values.

REL 531 Sociology of Religion (4) Examination of major classical and contemporary theorists, the impact of social change on religious institutions, and the social role and function of religion.

REL 532 Moral Issues in Urban Religion (4) The history, theologies, and practices of urban religious institutions: an examination of moral issues in the changing interaction between religion and urban culture.

REL 543 Radicalism and Reform in Religious Social Ethics (4) Critical and historical analysis of radical and reformist themes in 20th century religious social criticism, particularly in the American situation.

REL 544 Law, Politics, and the Religious Conscience (4) 19th century backgrounds. Church-state issues; religious communities as political agents; religious rhetoric and public political rhetoric.

REL 560 Normative Analysis of Issues (4) Methods of case study analysis which identify and draw upon ethical theory and result in public policy recommendation.

REL 565 Seminar in Bioethics (4) Ethical issues in death and dying, human experimentation, genetic engineering, behavior modification, health care delivery, abortion, and others.

REL 567 Seminar in Business Ethics (4) Critical evaluation of ethical issues in the relation between business and society; focus on value conflicts in resolution of issues.

REL 568 The Rights of Groups (4) Legal and moral rights of religious, racial, ethnic, and communal groups; sources and criticisms of group claims in sociology, ethics, and jurisprudence.

REL 570 Ethical Assessment of Technology (4) Analysis of psychological, social, and cultural impact of technology; formulation of normative social policy regarding military, computer, communications, energy, pollution, and behavior control technologies.

REL 572 Freedom, Justice and Order in Social Policy (4) Significance of, and conflicts between central social values; their applications to specific contemporary social policy questions.

REL 575 The Ethics of Women's Liberation (4) The methodologies of feminist ethics, their emergence out of the academic disciplines and women's movement, and their applications to social policy issues.

REL 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

REL 593 Practicum in Teaching the Liberal Arts (2, FaSp) (Enroll in MDA 593)

REL 594abz Master's Thesis (2-2-0) Credit on acceptance of thesis. Graded IP/CR/NC.

REL 599 Special Topics (2-4, max 8)

REL 600 Advanced Seminar in Religious and Philosophical Approaches to Social Ethics (4, max 8) Ontological and positivistic bases of social ethics.

REL 602 The Evolution of Roman Catholic Thought (4) The modern Roman Catholic description of the development of doctrine in the light of its ancient, medieval and modern sources.

REL 626 Seminar in Jewish Ethics (4) (Enroll in JS 626)

REL 630 Advanced Seminar in Religion and Culture (4, max 8) Moral expression as critical of and shaped by institutions and cultures.

REL 660 Advanced Seminar in Ethical Analysis and Policy Formation (4, max 8) Ethical reflection on the making of private and public policies from a moral perspective.

REL 790 Directed Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

REL 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC.

Slavic Languages and Literatures

Taper Hall of Humanities 255
(213) 740-2735
FAX: (213) 740-8550
Email: slavic@dornsife.usc.edu
dornsife.usc.edu/sll
Chair: Thomas Seifrid, Ph.D.*

Faculty

Professors: John Bowlit, Ph.D.*; Sharon Carnicke, Ph.D. (*Dramatic Arts*); Marcus Levitt, Ph.D.; Sarah Pratt, Ph.D.*; Azade-Ayşe Rorlich, Ph.D.; Thomas Seifrid, Ph.D.*; Alexander Zholkovsky, Ph.D.*

Associate Professors: Robert English, Ph.D. (*International Relations*); Roumyana Pancheva, Ph.D. (*Linguistics*)

Assistant Professors: Brad Damaré, Ph.D.*; Anna Krakus, Ph.D.

Professor (Teaching) of Russian: Tatiana Akishina, Ph.D.

Associate Professor (Teaching) of German: Britta Bothe, Ph.D.

Assistant Professors (Teaching) of German: John W. Arensmeyer Jr., Ph.D.; Eve Lee, Ph.D.

Lecturer: John Adam Peters III

Emeritus Professor: Anthony M. Mlikotin, Ph.D.

*Recipient of university-wide or college teaching award.

Undergraduate Programs

The Department of Slavic Languages and Literatures offers a major in Russian at the undergraduate level and minors in Russian and Russian Area Studies. The major combines thorough preparation in the Russian language with the study of Russian literature, art and culture. Particular emphasis is placed on developments in contemporary Russia. Students are required to study four semesters of Russian language as a prerequisite to the major. The major itself requires an additional three semesters of language study, three semesters of an advanced seminar on Russian culture (with varying content), and two elective courses, either in Russian literature and culture (in translation or Russian, depending on course scheduling) or in Russian area studies.

Graduate Programs

The Department of Linguistics offers, under the jurisdiction of the Graduate School, the Doctor of Philosophy in Linguistics (Specialization in Slavic Linguistics).

The Department of Comparative Studies in Literature and Culture offers, under the jurisdiction of the Graduate School, the Master of Arts and the Doctor of Philosophy in Comparative Studies in Literature and Culture (Slavic Languages and Literatures).

Undergraduate Degrees

Department Major Requirements for the Bachelor of Arts in Russian

REQUIRED COURSES, LOWER-DIVISION		UNITS
SLL 120	Beginning Russian I	4
SLL 150	Beginning Russian II	4
SLL 220	Intermediate Russian I	4
SLL 250	Intermediate Russian II, or	
SLL 255	Business Russian	4
REQUIRED COURSES, UPPER-DIVISION		UNITS
SLL 310	Advanced Russian in Popular Culture	4
SLL 321	Russian Culture, or	
SLL 330	Russian Thought and Civilization	4
SLL 340	Intercultural Communication in Russian	4
SLL 465	Seminar in Russian Studies (taken three times, with varying content)	4, max 12

And two elective courses approved by the undergraduate adviser.

Minor in Russian

Lower-division requirements for the major plus three upper-division elective courses chosen from the following (at least two of the areas must be represented): Russian language (SLL 310, SLL 340, SLL 420); Russian

literature and culture taught in Russian (SLL 321, SLL 465); Russian literature, art and culture taught in translation (SLL 330, SLL 344, SLL 345, SLL 348, SLL 378).

Minor in Russian Area Studies

Lower-division Requirements

Four semesters of Russian language (SLL 120, SLL 150, SLL 220 and either SLL 250 or SLL 255), or its equivalent.

Upper-division Requirements

The core course, SLL 330 Russian Thought and Civilization; one course outside the Slavic department, from among the following: HIST 324, HIST 328, HIST 415, HIST 416, HIST 417, HIST 424; IR 345, IR 346, IR 439, IR 483; POSC 464; and one elective, to be chosen from among: any upper-division SLL course in Russian literature, art or culture; HIST 320, HIST 324, HIST 415, HIST 416, HIST 417, HIST 424; IR 345, IR 346, IR 439, IR 483; POSC 464.

Note: the course taken to fulfill the requirement outside the Slavic department cannot also count as an elective.

Graduate Degrees

Master of Arts in Comparative Studies in Literature and Culture (Slavic Languages and Literatures)

See Comparative Studies in Literature and Culture (page 309xx) in this catalogue.

Doctor of Philosophy in Comparative Studies in Literature and Culture (Slavic Languages and Literatures)

See Comparative Studies in Literature and Culture (page 310xx) in this catalogue.

Doctor of Philosophy in Linguistics (Specialization in Slavic Linguistics)

Application deadline: January 1

See Linguistics (page 398xx) in this catalogue.

Certificate in Foreign Language Teaching

The Certificate in Foreign Language Teaching provides certification in the theory and practice of second or foreign language teaching for student language teachers concurrently enrolled in graduate degree programs in foreign languages or related graduate programs at USC; for graduates of such programs who are teaching languages; for external candidates concurrently enrolled in similar programs at accredited colleges or universities; or for graduates of such programs who are teaching languages. The certificate is meant to supplement graduate study in the literature or linguistics of foreign languages. It is also meant to supplement classroom teaching. Refer to the Department of Spanish and Portuguese (page 479xx) for course work requirements.

Courses of Instruction

SLAVIC LANGUAGES AND LITERATURES (SLL)

For the courses offered during any given term, consult the *Schedule of Classes*.

SLL 020 Course in Reading Russian (2) For graduate students wishing to use Russian as a scholarly tool. Emphasis on basic grammar and reading skills. Graded CR/NC.

SLL 025 Course in Reading Russian (2) Continuation of SLL 020. Reading of authentic materials from Russian press and students' areas of interest. For graduate students only. Graded CR/NC. *Prerequisite:* SLL 020.

SLL 120 Beginning Russian I (4) Introduction to the Russian language with emphasis on basic conversational skills, major points of grammar, and reading.

SLL 122 Elementary Polish I (4) Structure of the language, pronunciation, basic communication, and reading in modern Polish.

SLL 130ab Elementary Czech (4-4) *a:* Structure of the language, basic grammar, pronunciation, and oral communication. Readings in Czech; discussion of Czech history and culture. *b:* Continuation of SLL 130a. *Prerequisite:* SLL 130a.

SLL 150 Beginning Russian II (4) Continuation of SLL 120. *Prerequisite:* SLL 120.

SLL 152 Elementary Polish II (4) Continuation of SLL 122. *Prerequisite:* SLL 122.

SLL 199 Chess and Critical Thinking (2) Analysis of significant chess games, reflecting societal attitudes toward science, competition, art, gender, psychology, politics, and technology. Graded CR/NC.

SLL 200 Russian Moral Dilemmas in the 20th Century (4) Examines the primary moral experiences of Russian society in its transition from tsarism through communism and beyond.

SLL 201 Contemporary Russian Culture and Society (4) (SS only) Introduction to the culture, politics, and economics of contemporary Russia. Offered only as part of the International Summer Session in Russia. *Prerequisite:* SLL 120.

SLL 210 Masterpieces of the Russian Short Story (4) Critical reading of selected masterpieces of the Russian short story; works by Gogol, Turgenev, Dostoevsky, Tolstoy, Babel, Pasternak, Solzhenitsyn, and others. In English.

SLL 220 Intermediate Russian I (4) Development of thematic conversational skills with emphasis on extended dialogue. Review of basic morphology with special attention to verbs of motion. Reading of authentic material is emphasized. *Prerequisite:* SLL 120, SLL 150.

SLL 222 Readings in Polish Literature I (4) Continuation of elementary Polish and introduction to outstanding works in Polish literature. *Prerequisite:* SLL 122 and SLL 152.

SLL 250 Intermediate Russian II (4) Continuation of SLL 220. Development of proficiency in conversation skills, reading, and writing. *Prerequisite:* SLL 220.

SLL 252 Readings in Polish Literature II (4) Continuation of SLL 222. *Prerequisite:* SLL 222.

SLL 255 Business Russian (4) Language and culture course for intermediate Russian level students interested in business. Prepares students to communicate in Russian-speaking business settings in a linguistically sensitive manner. *Prerequisite:* SLL 220.

SLL 270ab Russian for Native Speakers (4-4) *a:* For native Russian speakers who cannot read or write Russian. Emphasis on essentials of grammar, vocabulary, and orthography, and the reading and writing of simple texts in Russian. *b:* Continuation of SLL 270a.

SLL 299 Chess — Advanced Thinking Techniques (2) Development of advanced understanding of the game of chess. Critical analysis of games and of the problem-solving techniques applicable in various game situations. Graded CR/NC. *Prerequisite:* SLL 199.

SLL 300 The Russian Novel (4) The rise of the novel as the dominant form in Russian literature of the 19th century. Major works by Gogol, Turgenev, Dostoevsky, Tolstoy, and others. In English.

SLL 301 Russian Literary Avant-Garde (4) Russian modernism and the avant-garde: development of modern sensibility in literature and the arts from 1880 to 1930. Readings in Chekhov, Sologub, Bely, Mayakovsky, and others. Conducted in English.

SLL 302 Modern Russian Literature (4) Survey of the major developments in Russian literature during the 20th century, from modernism to the post-Soviet era. Readings in English.

SLL 303 Contemporary Russian Literature (4) Developments in Russian Literature from the 1960s to the present. Literature of moral resistance directed against official cultural models. In English.

SLL 310 Advanced Russian in Popular Culture (4) Advanced conversation topics, readings and analysis of Russian press, films and other popular materials. Advanced grammar. Conducted in Russian. *Prerequisite:* SLL 250; *recommended preparation:* SLL 120, SLL 150, SLL 220.

SLL 321 Russian Culture (4) Survey of Russian civilization from the beginnings to the Soviet period focusing on major cultural and artistic trends. Lectures and readings in Russian. *Prerequisite:* four semesters of Russian.

SLL 330g Russian Thought and Civilization (4) Russian cultural identity from its beginnings until today. The Eastern Orthodox tradition, its traumatic confrontation with Western culture, and their continuous interaction. *Concurrent enrollment:* MDA 140.

SLL 340 Intercultural Communication in Russian (4) Advanced language training focusing on specific issues of communication with Russians. Analysis and translation of literary texts. Advanced syntax. Conducted in Russian. *Prerequisite:* SLL 250; *recommended preparation:* SLL 120, SLL 150, SLL 220.

SLL 344 Tolstoy: Writer and Moralist (4) Tolstoy's major works in the context of his ethical views. Readings and lectures in English.

SLL 345 Literature and Philosophy: Dostoevsky (4) Dostoevsky's novels as psychological and philosophical analyses of modern alienated man. Readings in Dostoevsky and selections from Gide, Kafka, Camus, and Sartre. Conducted in English.

SLL 346 Russian Drama and the Western Tradition (4) Representative plays from the 18th century to the present. Development of the Russian theater in the European context. Conducted in English.

SLL 348 Nabokov's Novels: Art and Exile (4) Survey of Vladimir Nabokov's novels written in Europe and America from the 1920s–1960s. Primary focus on the structure of the novels and their themes of art and emigration. Readings in English.

SLL 370 Advanced Russian for Native Speakers (4) For students with basic oral proficiency in Russian who need to develop native fluency in an array of genres and situations. Emphasis on advanced grammar, reading (literary and scholarly texts), written expression (scholarly, administrative, and business genres), spelling, and punctuation.

SLL 378 Modern Russian Art (4) Changing concepts of aesthetic value as expressed in the development of 19th and 20th century Russian art (painting and architecture).

SLL 390 Special Problems (1–4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

SLL 420 Seminar in the Russian Language (4) Survey and detailed analysis of selected topics in the Russian language. *Prerequisite:* SLL 310 or SLL 340.

SLL 465 Seminar in Russian Studies (4, max 12) Readings and discussion in Russian of current topics in Russian culture, politics and society. Content varies each time offered. *Prerequisite:* SLL 250.

SLL 490x Directed Research (1–8, max 12) Individual research and readings. Not available for graduate credit.

SLL 499 Special Topics (2–4, max 8)

SLL 500 Topics in Advanced Russian (2, max 8) Study of Russian required for graduate work and professional activities. *Prerequisite:* four years of college Russian.

SLL 501 Proseminar in Russian Literature (3) Introduction to graduate study of Russian literature: research methods, bibliography, transliteration, development of critical writing skills.

SLL 510 Old Church Slavonic (3) Study of the earliest recorded Slavic language; linguistic interpretation of original texts; knowledge of a Slavic language or general linguistics will be helpful.

SLL 512 History of the Russian Language (3) Phonetic, morphological, syntactical changes from common Slavic to the present. Russian literary language; influence of 19th century Russian authors and old church Slavic on contemporary Russian.

SLL 514 Structure of Modern Russian: Phonology (3) Articulatory phonetics, phonemics, morphophonemics, and intonational patterns of modern Russia. *Prerequisite:* three years of college Russian.

SLL 516 Structure of Modern Russian: Morphology (3) Essential issues in current linguistic description of the syntax and morphology of modern Russian. Considers word order, negation, verbal aspect.

SLL 530 Early Russian Literature and Culture (11th–17th Centuries) (3) Major monuments of medieval Russian literature examined in their cultural, literary, and theological context, with special emphasis on issues of genre. Focus on problems of Russian cultural identity and Russia's complex relationship to Byzantine and Western traditions. *Prerequisite:* SLL 510 and SLL 514.

SLL 532 18th Century Russian Literature (3) Major works and genres of the 18th century. The development of a "modern" literary tradition, focusing on problems of Russia's indigenization of Western literary movements (classicism and sentimentalism).

SLL 542 Symbolism (3) Russian symbolist literature; cultural and philosophical background of this late 19th and early 20th century movement. *Prerequisite:* three years of college Russian.

SLL 544 Russian Short Story (3) Pushkin, Gogol, Dostoevsky, Turgenev, Tolstoy, Chekhov. *Prerequisite:* three years of college Russian.

SLL 545 19th Century Russian Poetry (3) Analysis of major works of 19th century Russian poetry in the context of developing aesthetic principles and cultural history. *Prerequisite:* SLL 501.

SLL 546 The Russian Novel (3) Genre of the novel as exemplified in the works of one or more Russian authors. Readings from Gogol, Turgenev, Tolstoy, Dostoevsky, and others. *Prerequisite:* three years of college Russian.

SLL 548 History of Russian Literary Criticism (3) History and principles of literary criticism in Russia with attention to major periods and movements from the early 19th century through the Formalists.

SLL 555 Soviet Literature I (1917–1953) (3) The course surveys the major writers and literary schools of Soviet literature in the crucial period from the Revolution to the death of Stalin.

SLL 557 Soviet Literature II (1953–present) (3) De-Stalinization of Soviet culture, the reappropriation of Russia's literary past, and new directions in contemporary literature.

SLL 575 Socialist Realism (3) The course examines the origins, doctrine, and ideology of socialist realism, the predominant, and officially prescribed, aesthetic of Soviet literature.

SLL 584 Russian Fiction and the West (3) A survey of major Russian fiction in the context of Western European literary movements from the late 18th through late 19th centuries. The course presumes the students' basic acquaintance with the major monuments.

SLL 585 20th Century Russian Literary Criticism (3) Relationship between practical and theoretical literary criticism: Formalism and Structuralism, Sociological school, and Bakhtin; theoretical approaches applied to specific literary texts.

SLL 590 Directed Research (1–12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

SLL 593 Practicum in Teaching the Liberal Arts (2, FaSp) (Enroll in MDA 593)

SLL 599 Special Topics (2–4, max 8)

SLL 650 Seminar in Russian Literature (3, max 9) Detailed study of single literary period, movement or genre; two or more selected authors; specific school of literary criticism. May be repeated, with departmental permission, if content of the seminar is different. *Prerequisite:* three years of college Russian; *recommended preparation:* one year of graduate study.

SLL 660 Seminar on a Single Author or Work (3, max 9) Theme varies from year to year. An author or major work will be selected for intensive study; research paper required. May be repeated, with departmental permission, if content of the seminar is different. *Prerequisite:* three years of college Russian; *recommended preparation:* one year of graduate study.

SLL 665 Seminar in Russian Culture and the Arts (3, max 9) Subject varies from year to year. A trend or major figure will be studied in its cultural and artistic contexts. May be repeated, with departmental permission, if content of the seminar is different. *Prerequisite:* three years of college Russian; *recommended preparation:* one year of graduate study.

SLL 790 Research (1–12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

SLL 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC.

Sociology

Hazel and Stanley Hall 300

(213) 740-3533

FAX: (213) 740-3535

Email: soci@dornsife.usc.edu

dornsife.usc.edu/dept/soci

Chair: Rhacel Salazar Parreñas, Ph.D.

Faculty

Professors: Lynne Casper, Ph.D.; Sharon Hays, Ph.D.; Pierrette Hondagneu-Sotelo, Ph.D.*; Paul Lichterman, Ph.D.; Michael Messner, Ph.D.*; Rhacel Salazar Parreñas, Ph.D.; Manuel Pastor, Ph.D.*; John P. Wilson, Ph.D.

Associate Professors: Timothy Biblarz, Ph.D.*; Nina Eliasoph, Ph.D.; Macarena Gomez-Barris, Ph.D.* (*American Studies and Ethnicity*); Elaine Bell Kaplan, Ph.D.; Andrew Lakoff, Ph.D.; Leland Saito, Ph.D.

Assistant Professors: Katie Hasson, Ph.D.; Jennifer Hook, Ph.D.; Dan Lainer-Vos, Ph.D.; Alwyn Lim, Ph.D.; Ann Owens, Ph.D.; Veronica Terriquez, Ph.D.; Jody Agius Vallejo, Ph.D.

Associate Professor (Teaching): Karen Sternheimer, Ph.D.

Professor (Research): Jon Miller, Ph.D.*

Associate Professor (Research): Richard Flory, Ph.D.

Emeriti Professors: Constance Ahrons, Ph.D.; Vern Bengtson, Ph.D. (*Gerontology*); Lamar T. Empey, Ph.D.; Malcolm Klein; H. Edward Ransford, Ph.D.; Maurice D. Van Arsdol Jr., Ph.D.

*Recipient of university-wide or college teaching award.

Degree Programs

The Department of Sociology offers a departmental major and minor. The Department of Sociology also offers the Doctor of Philosophy in Sociology. Additional minors are also offered.

Undergraduate Degrees

Students of sociology examine the patterns of social life, focusing on the relationship of individuals to society and the interaction of culture, economy and politics in shaping social life. The greater Los Angeles area provides a natural laboratory for students to explore such sociological themes as race relations, work and workplace, immigration, the family in a changing society, population trends, globalization, religion, and the criminal justice system.

Matching the special strengths of our faculty and cutting edge research in the discipline, USC's sociology program offers two central areas of concentration — social inequality, and social change and public policy. Many of our undergraduate courses include opportunities to engage actively with the community and to pursue multi-faceted independent research projects.

Honors Program

Seniors with 3.5 GPAs in the major and 3.25 overall are encouraged to participate in the sociology honors program consisting of two intensive senior honors seminars (SOCI 494 and SOCI 495). Under faculty guidance, honors students design and complete a significant piece of original sociological research.

Juniors and seniors who have made substantial progress toward completion of the program and have achieved a 3.3+ GPA in sociology and a 3.0 GPA overall are eligible for the Alpha Kappa Delta International Sociology Honors Society.

Major Requirements for the Bachelor of Arts in Sociology

Nine courses (36 units) are required to complete the major.

All sociology majors must complete the four core courses of sociology:

CORE COURSES	UNITS
SOCI 200 Introduction to Sociology	4
SOCI 313 Sociological Research Methods	4
SOCI 314 Analyzing Social Statistics	4
SOCI 370 Sociological Theory	4

Five additional courses are required for the major. These are to be chosen from the elective upper-division sociology courses grouped into two theme areas:

Theme Area I: *Social Inequality*

Theme Area II: *Social Change and Public Policy*

All students are required to take at least one course from each of the two theme areas.

All students must achieve an overall average of C (2.0) or better in the nine courses required for completion of the major.

Theme Areas and Theme Area Specialization

Students who complete four upper-division courses in a single theme area will receive departmental recognition and documentation of their "expertise" in their chosen area of specialization — social inequality, or social change and public policy.

Social Inequality — courses address the character, causes and consequences of social inequality, paying particular attention to immigration, race, ethnicity, gender, sexualities and/or class. These courses include:

SOCIAL INEQUALITY COURSES	UNITS
AMST 357 Latino Social Movements	4
SOCI 305 Sociology of Childhood	4
SOCI 342 Race Relations	4
SOCI 350 Social Exclusion, Social Power, and Deviance	4
SOCI 355 Immigrants in the United States	4
SOCI 356 Mexican Immigrants in Sociological Perspective	4
SOCI 360 Social Inequality: Class, Status, and Power	4

SOCI 366 Chicana and Latina Experiences	4
SOCI 375 Asian Americans: Ethnic Identity	4
SOCI 376 Contemporary Issues in Asian American Communities	4
SOCI 430 Work and the Workplace	4
SOCI 432 Racial and Ethnic Relations in a Global Society	4
SOCI 435 Women in Society	4
SOCI 437 Sexuality and Society	4
SOCI 460 Key Issues in Contemporary International Migration	4
SOCI 464 Sociology of Gender and Work	4
SOCI 470 Development and Social Change in the Third World	4
SWMS 385 Men and Masculinity	4

Note: Honors students may substitute SOCI 494 Honors Seminar I for one social inequality course.

Social Change and Public Policy — courses address the character, causes and consequences of social change, paying particular attention to the role of human agency, grassroots organizing and/or political action, as well as the implications for public policy. These courses include:

SOCIAL CHANGE AND PUBLIC POLICY COURSES	UNITS
JS 382 Judaism as an American Religion	4
SOCI 320 Social Psychology	4
SOCI 331 Cities	4
SOCI 335 Society and Population	4
SOCI 340 Organizations: Bureaucracy and Alternatives to Bureaucracy	4
SOCI 351 Public Policy and Juvenile Justice	4
SOCI 353 Public Policy and Criminal Justice	4
SOCI 365 Visual Sociology of the City and Its Residents	4
SOCI 369 The Family in a Changing Society	4
SOCI 385 Population, Society, and Aging	4
SOCI 408 Volunteers, Non-Governmental Organizations, and Everyday Politics	4
SOCI 420 Sociology of Violence	4
SOCI 425 Crowds, Publics, and Social Movements	4
SOCI 475 Medical Sociology	4

Note: Honors students may substitute SOCI 495 Honors Seminar II for one social change and public policy course.

Sociology Minor Requirements

Five courses (20 units) are required to complete the minor in sociology.

All minors are required to take at least two of the core courses in sociology:

CORE COURSES		UNITS
SOCI 200	Introduction to Sociology	4
SOCI 313	Sociological Research Methods	4
SOCI 314	Analyzing Social Statistics	4
SOCI 370	Sociological Theory	4

The remaining three courses may be chosen from among the upper-division courses in the two theme areas — social inequality, and social change and public policy (see sociology theme areas listed above).

Minor in Forensics and Criminality

The interdisciplinary minor in forensics and criminality was designed for students interested in the study of law, deviant behavior or careers in the criminal justice system. In this program, students study psychological and/or ethical issues related to criminal behavior, consider criminality in the context of social class analysis, and learn about the American system of criminal justice. Twenty units are required, 4 at the lower-division and 16 at the upper-division level. Contact Dornsife College Advising for further details.

Students should choose a curriculum for their minor based on their academic interests. Those students interested in white collar crime, for example, might choose POSC 130 Law, Politics, and Public Policy at the lower-division level, REL 375 Conflict and Change and the Ethics of Business, SOCI 350 Social Exclusion, Social Power, and Deviance, PHIL 340 Philosophy of Law and PPD 342 Crime and Public Policy.

Those who are interested in the criminal justice system might choose LAW 200x Law and Society, REL 341 Ethics in a Technological Society, SOCI 351 Public Policy and Juvenile Justice, POSC 340 Constitutional Law and POSC 432 The Politics of Local Criminal Justice.

Those interested in individual and social determinants of deviancy might take PSYC 100 Introduction to Psychology, PSYC 360 Abnormal Psychology, or PSYC 463 Criminal Behavior, or PSYC 465 Introduction to Forensic Psychology; SOCI 360 Social Inequality: Class, Status, and Power, LAW 402 Psychology and Law and SOCI 353 Public Policy and Criminal Justice.

LOWER-DIVISION REQUIREMENT (4 UNITS)		UNITS
Choose one course from:		
AMST 101	Race and Class in Los Angeles	4
LAW 200x	Law and Society	4
PHIL 140	Contemporary Moral and Social Issues	4
POSC 130	Law, Politics, and Public Policy	4
PSYC 100	Introduction to Psychology	4
PSYC 155	Psychological Perspectives on Social Issues	4
PSYC 165L	Drugs, Behavior, and Society	4
SOCI 142	Diversity and Racial Conflict	4
SOCI 150	Social Problems	4
SOCI 200	Introduction to Sociology	4

UPPER-DIVISION REQUIREMENTS (16 UNITS)		UNITS
Choose one course from each group below:		
<i>The Individual in Society</i>		
PSYC 355*	Social Psychology, or	
SOCI 320	Social Psychology	4
PSYC 360*	Abnormal Psychology	4
PSYC 463*	Criminal Behavior	4

PSYC 465*	Introduction to Forensic Psychology	4
REL 341	Technology, Culture, and Ethics	4
REL 375	Conflict and Change and the Ethics of Business	4

*Prerequisite: PSYC 100

Social Class and Criminality

SOCI 350	Social Exclusion, Social Power, and Deviance	4
SOCI 351	Public Policy and Juvenile Justice	4
SOCI 360	Social Inequality: Class, Status, and Power	4

The System of Criminal Justice

LAW 402	Psychology and Law	4
LAW 403	Mental Health Law	4
PHIL 430	Philosophy of Law	4
PHIL 437	Social and Political Philosophy	4
POSC 340	Constitutional Law	4
POSC 426	The United States Supreme Court	4
POSC 444	Civil and Political Rights and Liberties	4
PPD 340	The American System of Justice	4

Crime and Punishment

POSC 432	The Politics of Local Criminal Justice	4
PPD 342	Crime and Public Policy	4
SOCI 353	Public Policy and Criminal Justice	4

Total requirements: five courses (20 units)

Minor in Managing Human Relations College Academic Services Building (213) 740-2534

This interdisciplinary minor is intended for students in all schools with an interest in human relations as a subject of study or professional goal. In addition to course work in organizational behavior, social psychology and management, this minor includes attention to questions of ethics and leadership.

As with all minors, students must include at least four upper-division courses and four courses dedicated exclusively to this minor (not used for credit toward a major, another minor or general education requirements). Finally, students must select four courses outside their major department. Students seeking the Bachelor of Arts in Sociology must choose four courses outside of sociology; those seeking the Bachelor of Science in Business Administration must choose four courses outside the USC Marshall School of Business.

REQUIREMENTS		UNITS
Choose one course from the following (4 units):		
BUAD 304	Organizational Behavior	4
PSYC 355*	Social Psychology	4
SOCI 320	Social Psychology	4

Choose one course from the following (4 units):

MOR 431*	Interpersonal Competence and Development	4
PSYC 457*	Applied Social Psychology	4
SOCI 340	Organizations: Bureaucracy and Alternatives to Bureaucracy	4
SOCI 342	Race Relations	4
SOCI 345	Social Institutions	4

Choose one course from the following list of classes on leadership (4 units):

CLAS 370	Leaders and Communities: Classical Models	4
IR 303	Leadership and Diplomacy	4
MDA 325	Case Studies in Modern Leadership	4
MDA 365	The Art and Adventure of Leadership	4
MOR 470*	Global Leadership	4
PHIL 335	Theoretical Models of Leadership	4

Choose one course from the following list of classes on ethics (4 units):

BUCO 425*	Public Communication in Ethics and Research	4
MOR 421*	Social and Ethical Issues in Business	4
PHIL 340	Ethics	4
REL 341	Technology, Culture, and Ethics	4
REL 375	Conflict and Change and the Ethics of Business	4

Choose one of the following three capstone classes (4 units):

ECON 332*	Contracts, Organizations, and Institutions	4
ECON 471*	Economics of Labor Markets and Human Capital	4
MOR 471	Managing and Developing People	4
SOCI 340	Work and the Workplace	4

*Course has prerequisite or corequisite

Total requirements: five courses, 20 units

Minor in Photography and Social Change

This minor explores the potential of photography as an instrument of social change that allows individuals to document their circumstances, share their stories and change their lives. Students have the opportunity to examine the impact of images and the power of storytelling both in the classroom and in the field and study the issues raised by this kind of social exploration and commentary.

Students learn techniques of digital photography and theories of culture to help them understand diverse cultural phenomena and navigate their own cultural biases. In the field, students apply these techniques and theories by developing their own body of work. In addition, students can mentor individuals in the community to use photography and digital media to share their personal narratives, thus empowering community members to reflect critically upon their circumstances and to participate in their visual representation.

This interdisciplinary minor brings together students from schools and majors across the USC campus, allowing them to interact with one another and with scholars, artists and professionals associated with key organizations such as the Institute for Photographic Empowerment and Venice Arts.

LOWER-DIVISION REQUIREMENT UNITS

Select one course, based on prior preparation (4 units):

AHIS 255	Culture Wars: Art and Social Conflict in the USA, 1900–Present	4
ANTH 240	Collective Identity and Political Violence: Representing 9/11	4
FAIN 210	Introduction to Digital Photography	4
SOCI 250	Grassroots Participation in Global Perspective	4

UPPER-DIVISION REQUIREMENTS UNITS

Select two courses in each category below, from different departments (16 units):

Understanding Culture and Change

(8 units, in 2 courses — each from a different department)

AMST 348	Race and Environmentalism	4
AMST 357	Latino Social Movements	4
COLT 303	Globalization: Culture, Change, Resistance	4
IR 371	Global Civil Society: Non-State Actors in World Politics	4
JS 330	Jewish Power, Powerlessness, and Politics in the Modern Era	4
POSC 323	Applied Politics: Civic Engagement and Leadership	4
POSC 441	Cultural Diversity and the Law	4
REL 336	Re-viewing Religion in Asian America	4
REL 366	Religion and Social Change	4
SOCI 360	Social Inequality: Class, Status, and Power	4
SOCI 470	Development and Social Change in the Third World	4

Media and Message

(8 units, in 2 courses — each from a different department)

AHIS 373	History of Photography	4
AHIS 469	Critical Approaches to Photography	4
ANTH 472	Visual Techniques in Anthropology: Stills	4
COLT 487	Critical Image	4
COMM 366	Designing Media and Communication Projects for Social Change	4
COMM 451	Visual Communication and Social Change	4
FAIN 310	Digital Photo Studio	4
JOUR 422	Visual Journalism	4

Students in this program will also have opportunities for special access to USC Annenberg's Public Diplomacy classes.

Total requirements: 20 units

Minor in Managing Human Relations College Academic Services Building (213) 740-2534

This interdisciplinary minor is intended for students in all schools with an interest in human relations as a subject of study or professional goal. In addition to course work in organizational behavior, social psychology and management, this minor includes attention to questions of ethics and leadership.

As with all minors, students must include at least four upper-division courses and four courses dedicated exclusively to this minor (not used for credit toward a major, another minor or general education requirements). Finally, students must select four courses outside their major department. Students seeking the Bachelor of Arts in Sociology must choose four courses outside of sociology; those seeking the Bachelor of Science in Business Administration must choose four courses outside the Marshall School.

REQUIREMENTS UNITS

Choose one course from the following (4 units):

BUAD 304	Organizational Behavior	4
PSYC 355*	Social Psychology	4
SOCI 320	Social Psychology	4

Choose one course from the following (4 units):

MOR 431*	Interpersonal Competence and Development	4
PSYC 457*	Applied Social Psychology	4
SOCI 340	Organizations: Bureaucracy and Alternatives to Bureaucracy	4
SOCI 342	Race Relations	4
SOCI 345	Social Institutions	4

Choose one course from the following list of classes on leadership (4 units):

CLAS 370	Leaders and Communities: Classical Models	4
IR 303	Leadership and Diplomacy	4
MOR 470*	Global Leadership	4
MDA 325	Case Studies in Modern Leadership	4
MDA 365	The Art and Adventure of Leadership	4
PHIL 335	Theoretical Models of Leadership	4

Choose one course from the following list of classes on ethics (4 units):

BUCO 425*	Public Communication in Ethics and Research	4
MOR 421*	Social and Ethical Issues in Business	4
PHIL 340	Ethics	4
REL 341	Technology, Culture, and Ethics	4
REL 375	Conflict and Change and the Ethics of Business	4

Choose one of the following three capstone classes (4 units):

ECON 332*	Contracts, Organizations, and Institutions	4
ECON 471*	Economics of Labor Markets and Human Capital	4
MOR 471	Managing and Developing People	4
SOCI 340	Work and the Workplace	4

*Course has prerequisite or corequisite

Total requirements: five courses, 20 units

Minor in Science, Technology, and Society

The beginning of the 21st century has witnessed a number of public controversies at the intersection of science, technology and society. Such discussions are characterized by divergent views on the role of science and technology in contemporary life. Over the next decades many of the most crucial challenges we face will require the integration of societal values with scientific and technological developments — whether in managing end-of-life care, preserving the environment, or continuing to nurture scientific innovation. This minor introduces students to a number of approaches to these questions, taking advantage of the diverse offerings in this area at USC.

Lower-division Requirement (4 units)

SOCI 210 Science, Technology and Social Conflict (4)

Upper-division Requirement (minimum 16 units)

Four or five* classes, selected from at least two of the three categories:

SCIENCE AS A SOCIAL INSTITUTION UNITS

AHIS 429	Studies in Art, Science and Technology	4
ANTH 373	Magic, Witchcraft, and Healing	4
CLAS 339	Ancient Science	4
HIST 329	Madness and Society in the Modern Age	4
HIST 330	Drugs, Disease and Medicine in History	4
PHIL 385	Science and Rationality	4
PHIL 486	Methodologies of the Sciences	4
REL 442	Religion and Science	4
SOCI 475	Medical Sociology	4

TECHNOLOGY AND MODERN LIFE UNITS

COLT 474	Desire, Literature, Technology	4
COMM 306	The Communication Revolution, Entertainment and the Arts	4
COMM 340	The Cultures of New Media	4
COMM 345	Social and Economic Implications of Communication Technologies	4
CTCS 478	Culture, Technology and Communications	4
ENGL 375	Science Fiction	4
REL 319	Religious and Ethical Issues in Death and Dying	4
REL 341	Technology, Culture, and Ethics	4
REL 360	Ethical Issues in the New Medical Revolution	4

HEALTH, ENVIRONMENT AND SCIENCE POLICY		UNITS
CE 469*	Sustainable Design and Construction	3
CE 473*	Engineering Law, Finance and Ethics	3
HP 412	Health Promotion and Prevention Policy	4
LAW 403	Mental Health Law	4
POSC 436	Environmental Politics	4
PPD 330	Introduction to Health Care Systems	4
PPD 360	Urban Transportation Planning and Policy	4
PPD 413	Administration of Health Care Organizations	4
REL 460	Senior Seminar: Medical Ethics	4

*CE 469 and CE 473 are 3-unit courses; choosing one of these courses requires students to take six total courses for the minor.

Total requirements: five or six courses (minimum 20 units)

University Requirements for All Minors

To satisfy the university's minor requirements, students must choose at least four courses (16 units) outside their major department and at least four courses (16 units) of upper-division course work. In addition, at least four courses (16 units) must be dedicated to the minor (not counting for credit toward a major, another minor or USC core requirements).

Interdisciplinary Minors

American Studies and Ethnicity (see American Studies and Ethnicity, page 259xx).

Children and Families in Urban America (see Social Work, page 929xx).

Law and Society (see Political Science, page 439xx).

Race, Ethnicity and Politics (see Political Science, page 439xx).

Graduate Degrees

The Department of Sociology offers programs of study leading to the Doctor of Philosophy degree. The Ph.D. is directed toward the training of theoretically and methodologically sophisticated sociologists who have an enduring commitment to the practice and teaching of sociology.

Deadline

Applicants must complete their applications by December 1. Consideration for university fellowships is possible as early as November for students whose applications are complete.

Prerequisites

All applicants must have a bachelor's degree, a GPA of at least 3.0, and one or more courses in either undergraduate statistics or college algebra.

Criteria

Admission to regular graduate status ordinarily requires possession of a bachelor's degree, a GPA of at least 3.0, one or more courses in undergraduate statistics and/or college algebra, and three letters of recommendation. The GRE is also required; scores of 550 or better on each of the verbal, quantitative and analytic portions of the GRE are preferred. International applicants must also submit their score on the Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS). Approximately 6–8 students enroll each year from the available pool of applicants. Each application receives careful attention and is judged in terms of the full set of criteria.

A limited number of graduate course units taken elsewhere may be considered for transfer into the graduate program. These units are transferred in on a course-by-course basis.

Application Procedures

The following materials should be submitted to apply for graduate study:

1. an online USC application form (available at usc.edu/admission/graduate/admission) plus a check for the admission fee;
2. official transcripts of all undergraduate and graduate work;
3. the official results of the general aptitude scores of the Graduate Record Examinations (verbal, quantitative, and analytical);
4. for international students, a TOEFL or IELTS score;
5. a completed Sociology Department Graduate Application form (please save and upload);
6. one example of written work (normally a paper written for a course) of no more than 20 pages;
7. three letters of recommendation from persons who can write about your academic performance and your potential as a social scientist;
8. a personal statement describing (1) your present sociological interest, (2) the instructors, books, and/or journals that have had the greatest influence on your interests in sociology, and (3) what you hope to be doing in the field of sociology 10 years after you receive your degree. Please include any other aspect of your experience that you want to include.

Degree Requirements

These degrees are under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 84xx) and the Graduate School section of this catalogue (page 95xx) for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School.

Residence

All graduate students must be in residence and must take at least eight units of graduate work each semester (except during Advanced and Qualifying Examinations), prior to work on the dissertation.

Master of Arts in Sociology

The department does not admit students whose objective is a master's degree. However, if a student accepted in the program does not have a master's degree, the department strongly recommends completion of the

requirements for the M.A. in the course of work toward the Ph.D. degree.

Doctor of Philosophy in Sociology

Course Requirements

A minimum of 60 graduate units is necessary for the Ph.D., among which are the following required courses: SOCI 510, SOCI 520, SOCI 521, SOCI 523 or SOCI 524, SOCI 610, and SOCI 621. In addition, each student must specialize in two subareas of sociology and must take at least 8 units in each area such as: urban sociology, complex organizations, stratification, ethnic relations, sociology of aging, medical sociology, communication and culture, deviance, sociology of gender, demography, and so on.

Screening Procedure

Normally, students must complete the screening procedure during the third semester of enrollment. Students will have completed two full semesters of work by this point and, hence, will have taken no fewer than 16 and no more than 24 units, including at least three of the following: SOCI 510, SOCI 521, SOCI 523 or SOCI 524, SOCI 610, and SOCI 621. Students are evaluated on subject matter competence and satisfactory progress. When the screening procedure is successfully completed, the student has one semester in which to form a qualifying exam committee.

Empirical Paper

Each student is required to complete an independent empirical research project which is approved by two members of his or her qualifying exam committee. In some instances, this requirement may be met by acceptance of a satisfactory master's thesis from some other university.

Foreign Language Requirement

The department does not generally require proficiency in a foreign language; however, as with other courses outside the department, a student's qualifying exam committee may in some cases require proficiency in a foreign language.

Qualifying Examinations

Following the completion of their empirical papers and most of their course work, students are required to take a written and oral examination in their two specialty areas. If the written examination is passed, the oral part of the examination can be devoted to a preliminary discussion of dissertation plans. When these are completed successfully, the student is advanced to Ph.D. candidacy.

Dissertation

After the dissertation is completed, the student and the dissertation committee, in conjunction with the department chair, may elect either a defense oral or a final oral examination in defense of the dissertation. The defense oral is normally chosen in sociology.

Courses of Instruction

SOCIOLOGY (SOCI)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

SOCI 100gm Los Angeles and the American Dream (4) Los Angeles as a metaphor for the American Dream, exploring the city's history and potential futures, including economic opportunity, social justice, spatial organization, and environmental sustainability. Duplicates credit in the former AMST 100gm and GEOG 100gm. Concurrent enrollment: WRIT 140.

SOCI 142gm Diversity and Racial Conflict (4, FaSp) Introduction to the causes and effects of contemporary race relations in a diverse U.S. society. Exploration of racial conflict at the personal and institutional levels. *Concurrent enrollment:* WRIT 140.

SOCI 150gm Social Problems (4, Fa) Analysis of factors in current American social problems: crime, delinquency, prostitution, family disorganization, race relations, mental illness. *Concurrent enrollment:* WRIT 140.

SOCI 155gm Immigrant America (4, FaSp) Examination of the immigrant experience in the United States. Comparative analysis of social context of migration, formation of immigrant communities, and social integration of immigrants. *Concurrent enrollment:* WRIT 140.

SOCI 169gm Changing Family Forms (4, FaSp) The peculiarity of the "modern" Western family system in historical and cross cultural perspective; focus on the "postmodern" family crisis in the United States. *Concurrent enrollment:* WRIT 140.

SOCI 200m Introduction to Sociology (4) Basic concepts of sociology with special reference to group life, social institutions, and social processes.

SOCI 210g Science, Technology, and Social Conflict (4) Science and technology change society and how we understand ourselves. In turn, social struggles influence science. We will explore the interplay between these forces. *Concurrent enrollment:* WRIT 140.

SOCI 220gm Questions of Intimacy (4, FaSp) Analysis of conditions of intimacy and intimate personal relationships as lenses for understanding social inequalities of race, social class, gender, sexuality, and nation. *Concurrent enrollment:* WRIT 140.

SOCI 250gm Grassroots Participation in Global Perspective (4) Theory and history behind the ideal of "the local, grassroots volunteer": a direct link between theory and research using Los Angeles as a case study.

SOCI 255g Sociology of Globalization (4, FaSp) This course examines globalization through social and economic processes and its consequences for social conflict, economic development, human rights, social movements, and national identity. *Concurrent enrollment:* WRIT 140.

SOCI 275 Sociology of Everyday Life (4) The social philosophy of understanding everyday life; describing and analyzing forms of interaction, emotions, knowledge, and the social self.

SOCI 305m Sociology of Childhood (4) Social construction of childhoods; children's social relations and cultures; issues of childcare, poverty, violence, and children's rights; effects of children on adults.

SOCI 313 Sociological Research Methods (4, FaSp) Logic of theory construction, research design, elementary data collection and analysis. Lecture and laboratory.

SOCI 314 Analyzing Social Statistics (4, FaSp) Sociological measurement, univariate description, elementary correlation, introduction to statistical inference.

SOCI 315 Sociology of Sport (4) Relationship between sport and politics, racism, and sexism; player and fan violence; sports for children; sport in the educational setting; drug abuse among athletes.

SOCI 320 Social Psychology (4) Process of interaction and communication by which persons influence and are influenced by others; development of self, role behavior, attitudes and values, social norms, cultural conditioning.

SOCI 331 Cities (4) Organization of urban society, including such topics as segregation, urban decay, local politics, residential change, and community conflict.

SOCI 335 Society and Population (4) World population trends and their consequences: determinants of fertility, mortality, and migration; development of elementary models of population change.

SOCI 340 Organizations: Bureaucracy and Alternatives to Bureaucracy (4) Importance of organizations in social life; techniques for using and changing organizations; examination of strategies for building and sustaining nonbureaucratic organizations.

SOCI 342m Race Relations (4, FaSp) Past and present relations between the White majority and the "conquered minorities" (Blacks, Chicanos, American Indians), as well as Asian immigrants; conflict vs. assimilation perspectives.

SOCI 345 Social Institutions (4) Cultural and interactional aspects of social institutions as complex social systems; religious, political, industrial, and familial institutions.

SOCI 350 Social Exclusion, Social Power, and Deviance (4, Fa) Current theories of origin, distribution, and control of deviant behavior; examination of processes involved in the career deviance of drug addicts, alcoholics, sexual deviants, gamblers, and mentally disordered.

SOCI 351 Public Policy and Juvenile Justice (4) Past and current theories of youth crime; gangs and other forms of youth deviance; the changing response of the police, courts, and public to these behaviors.

SOCI 353 Public Policy and Criminal Justice (4) Nature and trends in crime, policing, courts, and correctional agencies in relation to past, current, and prospective changes in society.

SOCI 355m Immigrants in the United States (4) Social construction of historical and contemporary immigration to the United States, including causes of migration, immigration policies, and the socioeconomic integration of immigrants.

SOCI 356m Mexican Immigrants in Sociological Perspective (4) Effects of class, global inequality, legal status, gender, racial/ethnic, and language differences in distinguishing Mexican immigrant populations from the U.S.-born population; differentiation among Mexican immigrants.

SOCI 357m Latino Politics (4) (Enroll in AMST 357m)

SOCI 360m Social Inequality: Class, Status, and Power (4, FaSp) Inequalities in wealth, prestige, and power in the United States; the American class structure and the extent of upward mobility in that structure.

SOCI 362 Global and Transnational Sociology (4, FaSp) Examines key issues in global and transnational sociology. Globalization is the empirical phenomenon where social, economic, and political interconnectedness across countries impacts the world.

SOCI 364m Racial and Ethnic Women in America (4, FaSp) (Enroll in SWMS 364m)

SOCI 365 Visual Sociology of the City and Its Residents (4) Students examine images of urban America and use the camera to produce visual representation in their analysis of social relations.

SOCI 366m Chicana and Latina Sociology (4) Sociological examination of Chicana and Latina experiences in the western region of the United States; issues of family, work, media, education and sexuality.

SOCI 369 The Family in a Changing Society (4, Fa) Changing family patterns; personality development; family unity, predicting success in marriage; the family in transition; crises such as economic changes, death, divorce; family reorganization.

SOCI 370 Sociological Theory (4, FaSp) Historical and contemporary approaches to sociological theory; analysis of conceptual frameworks applied to the study of society and social interaction.

SOCI 375m Asian Americans: Ethnic Identity (4) Cultural images and stereotypes, gender, immigration history, social class, politics, and social problems in Asian American communities.

SOCI 376m Contemporary Issues in Asian American Communities (4) Survey of current social and political issues facing Asian American communities with emphasis on Los Angeles region; design and implementation of community-based research projects.

SOCI 379m Mixed Matches: Inter marriage and American Society in the 21st Century (4, Sp) (Enroll in JS 379m)

SOCI 382 Judaism as an American Religion (4) (Enroll in JS 382)

SOCI 385 Population, Society, and Aging (4, Fa) Study of population characteristics related to the problems and processes of aging.

SOCI 386m Men and Masculinity (4) (Enroll in SWMS 385m)

SOCI 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

SOCI 402 Human Trafficking (4, FaSp) Interrogates the social construction of the legal category "human trafficking," examining the ideological foundations, the social contentions, and political issues surrounding the issue.

SOCI 408 Volunteers, Non-Governmental Organizations, and Everyday Politics (4, FaSpSm) Theory, practice, and history of civic life. Examines communication, personal obligation, collective imagination, and political representation, in grassroots, state-sponsored, and non-governmental organization-sponsored civic associations around the world. *Prerequisite:* SOCI 370.

SOCI 410 The Sociology of Popular Culture (4) From the entertainment capital of the world, course surveys sociological research on artistic producers and critical theories of the connections between popular culture and society.

SOCI 420 Sociology of Violence (4, FaSp) Theoretical, conceptual and analytical skills in the study of collective violence, its legacies, and how society deals with it.

SOCI 425 Crowds, Publics, and Social Movements (4, FaSp) Spontaneous, expressive and creative forms that support or revolutionize society, including topics such as audiences, student unrest, tax revolts, patriotism, uprisings, and women's movements.

SOCI 429 Immigration, Work and Labor (4, FaSp) Examination of the experiences of racial minorities in the labor market, niche concentration, the effects of globalization on labor migration, entrepreneurship, discrimination, and minorities in white-collar occupations.

SOCI 430m Work and the Workplace (4) Contrasting views of work in contemporary societies; technological change in the workplace; opportunity, inequality, conflict, and alienation in different occupations.

SOCI 432m Racial and Ethnic Relations in a Global Society (4, FaSp) Examination of race/ethnic relations with U.S. and selected countries from a global perspective, causes and social effects of globalization on people's lives and on U.S. attitudes and political policies.

SOCI 435m Women in Society (4) Women today in the labor force, in politics, and in the family. Past and contemporary attempts to expand the position of women in society.

SOCI 437 Sexuality and Society (4) Historical and contemporary sexual issues (pornography, prostitution, rape) examined in light of Victorianism, Freudianism, Marxism, scientific sexology, feminism, gay liberationism, and sexual conservatism.

SOCI 445 Political Sociology (4, Irregular) Political power, conflict and apathy; public symbols, debate and discourse; nationalism; relations between politics, provision of social services and economics in comparative and historical perspective. *Prerequisite:* SOCI 370.

SOCI 455m Gender and Sport (4) (Enroll in SWMS 455m)

SOCI 460 Key Issues in Contemporary International Migration (4, Irregular) Overview of contemporary patterns of international migration and its implications for receiving and sending countries, with a special emphasis on immigration to the United States.

SOCI 464 Sociology of Gender and Work (4, FaSp) Examination of gender inequality in the U.S. labor market; work-family conflict; employer remedies; comparative social policy.

SOCI 468 Sociology of Religion (4) (Enroll in REL 468)

SOCI 470 Development and Social Change in the Third World (4) Theories and case studies on social, economic, political, and cultural development and change in the Third World: Latin America, Asia, or Africa.

SOCI 475 Medical Sociology (4) Social and cultural factors in causation of disease, health care utilization and health care delivery.

SOCI 480 The Sociology of Risk and Disaster (4, FaSp) Is there such a thing as a "natural" disaster? Examination of both natural and technological disasters, and exploration of the centrality of risk in industrialized societies.

SOCI 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

SOCI 494 Sociology Honors Seminar I (4, Fa) Advanced seminar involving extensive reading, research and discussions. Selected subjects; offered in fall only and restricted to honors students. Acceptance into the Honors Program.

SOCI 495 Sociology Honors Seminar II (4, Sp) Seminar in workshop form to accompany completion of Senior Honors Thesis under faculty guidance. Acceptance into Honors Program. *Prerequisite:* SOCI 313, SOCI 494.

SOCI 499 Special Topics (2-4, max 8) An interdisciplinary examination of selected emerging issues.

SOCI 510 Sociological Theory I (4, Fa) Developments in sociological theory from the discipline's 19th century origins to World War II.

SOCI 520 Qualitative Research Methods (4, Fa) Seminar in epistemologies, ethics, and techniques of qualitative research. Critical reading and practice in social observation, interviewing, fieldwork, and research design. Preparation of IRB proposal.

SOCI 521 Quantitative Methods and Statistics (4, Fa) Introduction to the logic and methods of quantitative analysis in sociology; covers the basic elements of designing and research, summarizing and exploring patterns in data, and making generalizations about populations based on characteristics of samples.

SOCI 523 Advanced Methods — Quantitative Research (4, Sp) Advanced research methodology in survey technique, evaluation research, instrument construction, and demographic analysis.

SOCI 524 Advanced Methods — Qualitative Research (4, Sp) Seminar and practicum in conducting and interpreting original qualitative research. *Prerequisite:* SOCI 520.

SOCI 525 Sociology Proseminar: Approaches to Sociological Research (4, FaSp) Graduate students begin their customized literature reviews and develop a paper that will frame the research they pursue in the empirical paper requirement. Open only to Sociology doctoral students.

SOCI 532 Seminar in Science and Technology Studies (4, max 8, FaSp) Introduction to key concepts and theories in the interdisciplinary field of science and technology studies.

SOCI 535 Sociology of Culture (4, FaSp) Cultural theories and forms of cultural analysis appropriate for sociological research; critical examination of theory and research on how culture relates to social structure, social inequality, politics, institutions, and everyday interaction. *Recommended preparation:* SOCI 510 or prior undergraduate or graduate course work in social science or communication studies.

SOCI 537 Political Sociology: Politics, Symbols and Everyday Life (4, FaSp) Political power, conflict and apathy; public symbols, debate and discourse; nationalism; relations between politics, provision of social services and economics in comparative and historical perspective.

SOCI 540 Methods of Population and Ecological Analysis (2-4, Sm) Measures of population; ecological structure and change; life table methods; population estimates, projections, forecasts; distributional analysis and evaluation of demographic and ecological data. *Prerequisite:* SOCI 521.

SOCI 544 Population Trends: Public and Private Policies (4, Sm) World and national population trends; causes and implications for economic, health, and social policies.

SOCI 545 Seminar in World Population Problems (4)

Demographic characteristics of the major regions of the world; social, economic, and political implications of population trends and methods of demographic analysis. *Prerequisite:* SOCI 335.

SOCI 548 Fertility Control Policies (4, Sm)

Fertility control policies, and their consequences, including family planning and other pronatalist and antinatalist programs.

SOCI 549 Migration Policies (4)

Analysis of migration and population redistribution; policies affecting such migration and redistribution.

SOCI 550 Seminar in Organizational Analysis (4)

Literature evaluation, theory building, and research in the area of large-scale organizations and other types of institutionalized groups. *Prerequisite:* graduate standing.

SOCI 551 Seminar in Social Stratification (4)

Critique of research literature and research methods in the area of social class and social stratification; major theories and theoretical implications of current research.

SOCI 552 Sex and Gender in Society (4, Fa)

The social organization of gender in the contexts of work, families, intimacy, sexuality, reproduction, violence. Variations by race, ethnicity, social class. Processes of social change.

SOCI 554 Women in Global Perspective (4)

(Enroll in SWMS 554)

SOCI 555 Seminar in Race Relations (4, Sp)

Current racial problems in the United States and other countries; critiques of race relations literature.

SOCI 560 Feminist Theory (4)

(Enroll in SWMS 560)

SOCI 566 Seminar in Social Deviance (4)

Deviance and social rules in groups and communities; contemporary social policies involving ethnic, cultural, and social factors.

SOCI 571 Urban Sociology (4, FaSp)

Examination of theories and research on cities in the United States, examining issues such as politics, race, development, and inequality. Open only to master's, professional, or doctoral students.

SOCI 575 Seminar in Immigration (4, FaSm)

Survey of key theoretical approaches and relevant issues in immigration studies. Themes include: transnationalism, globalization, gendered migration, segmented assimilation, immigrant labor markets, social incorporation and citizenship. Open to Ph.D. in Sociology students only.

SOCI 580 Seminar in Aging (4)

Research seminar to review identification of problems, issues of theory, and methodology and implications for research designs.

SOCI 590 Directed Research (1-12, FaSpSm)

Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

SOCI 593 Practicum in Teaching the Liberal Arts

(2, FaSp) (Enroll in MDA 593)

SOCI 594abz Master's Thesis (2-2-0, FaSpSm)

Credit on acceptance of thesis. Graded IP/CR/NC.

SOCI 599 Special Topics (2-4, max 8, FaSp)

Seminar in selected topics in sociology.

SOCI 610 Sociological Theory II (4, Sp)

Developments in sociological theory from World War II to the present.

SOCI 621 Quantitative Methods and Statistics II (4, Sp)

Casual modeling and the inter-relationships among social phenomena: covers the basic elements of casual inference and generalizability, linear regressions analysis, and categorical data analysis. *Prerequisite:* SOCI 521.

SOCI 628 Theories of Aging (4)

(Enroll in GERO 628)

SOCI 635 Seminar in Social Structure (4)

Research and theory development on the interrelations among the various structures that comprise social systems. An examination of large societal units. *Prerequisite:* advanced graduate standing.

SOCI 650 Topical Issues in Crime and Delinquency

(2-4) Seminar in selected topics in criminology.

SOCI 664 Seminar in Advanced Methodology (4, max 8)

Issues and problems in advanced research design and data analysis.

SOCI 790 Research (1-12, FaSp)

Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

SOCI 794abcdz Doctoral Dissertation (2-2-2-0, FaSpSm)

Credit on acceptance of dissertation. Graded IP/CR/NC.

Sophomore Seminars

Sophomore Seminars focus on topics of current interest in research and scholarship. They are small classes that encourage close interaction between faculty and students.

During the fall and spring semesters, sophomores earn 2 units of credit through participation in these weekly seminars. During intensive special sessions, sophomores earn 1 unit of credit. These courses emphasize active exploration of the life of the mind through a variety of classroom activities and assignments.

To encourage a relaxed interchange of information and ideas, each seminar is graded credit/no credit and limited in enrollment to 18 students.

Sophomore Seminars will be offered for the fall and spring semesters in a variety of subjects. They will also be offered during intensive special sessions. Individual topics will be indicated in the *Schedule of Classes* under the SSEM designation.

Courses of Instruction

SOPHOMORE SEMINARS (SSEM)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

SSEM 200 Sophomore Seminar (1-2, max 2, FaSp and Special Sessions)

Special seminar courses for sophomores; limited to 18 students; topics will vary; graded CR/NC. Open to sophomores only.

Spanish and Portuguese

Taper Hall of Humanities 156

(213) 740-1258

FAX: (213) 740-9463

Email: spanish@dornsife.usc.edu
dornsife.usc.edu/spanish

Interim Chair: Sherry Velasco, Ph.D.

Faculty

Professors: Mario Saltarelli, Ph.D.; Carmen Silva-Corvalán, Ph.D.*; Sherry Marie Velasco, Ph.D.*

Associate Professors: Roberto Ignacio Díaz, Ph.D.*; Erin Graff Zivin, Ph.D.; Julián Daniel Gutiérrez-Albilla, Ph.D.; Teresa McKenna, Ph.D. (*English*)

Assistant Professor: Samuel Steinberg, Ph.D.

Associate Professor (*Teaching*) and Director of Spanish Language Program: Gabriela Zapata, Ph.D.

Assistant Professors (*Teaching*): Marianna Chodorowska-Pilch, Ph.D.; Gayle Fiedler Vierma, Ph.D.; Anahit Hakopian, Ph.D.; Ana Teresa Martinez-Sequeira, Ph.D.; Andrea Parra, Ph.D.; Charles Paus, Ph.D.; Liana Stepanyan, Ph.D.; David Zarazúa, Ph.D.

Senior Lecturer: Lorena Gallego, M.A

Lecturers: Vianey Cano Brito, Ph.D.; Carolina Castillo Larrea, M.A.; Marie Enright, Ph.D.; Maura Crowley,

Ph.D.; Ivette M. Gómez, Ph.D.; Faith Harden, Ph.D.; Leah Kemp, Ph.D.; Lori Mesrobian, Ph.D.; Ellen Oliveira, Ph.D.; Sarah Portnoy, Ph.D.

Emeritus Professor: Paul Ilie, Ph.D.

Emeritus Associate Professor: J. Ramón Araluze, Ph.D.

**Recipient of university-wide or college teaching award.*

Undergraduate Programs

The Department of Spanish and Portuguese offers both a major and a minor in Spanish, emphasizing the language, linguistics and culture of Spain and Latin America.

With an intellectual commitment to multiculturalism and interdisciplinarity, the undergraduate program actively explores the transnational intersection of various aspects of Spanish and Latin American culture, including literature, folklore, cinema, art, music and architecture. While living and studying in 21st century Los Angeles — the ideal site for thinking about the planet's increasingly transcultural condition — students are challenged to consider and reconsider a number of important issues: the growing importance of popular culture in Iberia, Latin America and Latino USA; the role of race, class and gender within Spanish and Latin American society; the crucial impact of diasporas and migrations on our contemporary cultural landscape; among many others.

The department encourages students to combine a Spanish major with a double major or minor in another discipline either within the USC Dornsife College of Letters, Arts and Sciences or other schools at USC. Faculty undergraduate advisers are available to help provide information and assistance to students wishing to explore these various options.

The department also offers basic language instruction in both Spanish and Portuguese through which students can satisfy their foreign language requirement.

Graduate Programs

The Ph.D. in Linguistics (Hispanic Linguistics) is offered through the Linguistics Department. See page 397xx for degree requirements. The M.A. and Ph.D., Comparative Studies in Literature and Culture (Spanish and Latin American Studies) are offered through the Comparative Studies in Literature and Culture program. See page 307xx for degree requirements.

Spanish Undergraduate Students Association (SUSA)

Students majoring or minoring in Spanish are eligible to join SUSA, the Spanish Undergraduate Students Association. Each year SUSA sponsors a variety of activities which enrich the cultural, intellectual and academic experience of the undergraduate student.

Undergraduate Degrees

General Information

Spanish Language Proficiency Examination

Students with previous exposure to Spanish are required to take a placement test, administered by the Center for Testing and Assessment. Students with no record of previous exposure to Spanish are not required

to take the placement examination and should contact the department for assistance.

Courses in Spanish

All courses at the 200, 300 and 400 levels are conducted in Spanish unless otherwise noted in the course descriptions that follow. Courses are kept small to allow for maximum interaction between students and professors.

Advisement

A college undergraduate adviser is assigned to provide academic advisement prior to registration and throughout the academic year.

Major Requirements for the Bachelor of Arts in Spanish

REQUIRED COURSES —

LOWER-DIVISION (8 UNITS)*

SPAN 260**	Advanced Spanish: Arts and Sciences	4
SPAN 261**	Advanced Spanish: Society and the Media	4

REQUIRED COURSES —

UPPER-DIVISION (16 UNITS)

Four of the following courses:		
SPAN 301	Introduction to Hispanic Literature and Film	4
SPAN 310	Structure of Spanish	4
One other SPAN literature, culture, film course		4
One 400-level SPAN course		4

Electives (16 units):

Four other upper-division SPAN courses.

Only one section of SPAN 316x may be taken for major or minor credit.

Honors Program

The B.A. in Spanish with Honors is available to students who have a GPA of at least 3.5 in courses counted for major credit and an overall GPA of 3.0 (by the time of graduation). Desire to complete the major with honors typically should be approved by a department faculty member no later than the second semester of the junior year. To complete the honors program the student must write an honors thesis in Spanish in conjunction with a 400-level course. The thesis, in the range of 25–30 pages (6,250–7,500 words), must be endorsed by a departmental honors committee by April 1 of the senior year.

**Majors and minors may request a waiver of one or both courses (SPAN 260 and/or SPAN 261) if they meet one or more of the following prerequisites: a) a score of 5 on the Spanish language or literature advanced placement (AP) exam; b) a score of 6 or 7 on the Spanish International Baccalaureate Higher-Level exam (IBHL); c) a score of 800 in the Spanish SAT subject exam; or d) demonstrate advanced proficiency in spoken and written Spanish. Departmental approval is required in every case.*

***SPAN 260 and SPAN 261 may be taken concurrently. The second of these courses may be taken concurrently with a 300-level course.*

Minor in Spanish

REQUIRED COURSES —

LOWER-DIVISION (8 UNITS)

SPAN 265	Spanish for Communication: Society and the Media	4
SPAN 266*	Spanish for Communication: Arts and Sciences	4

UPPER-DIVISION (16 UNITS)

Any four courses at the 300- or 400-level

BASIC LANGUAGE **

SPAN 120	Spanish I	4
SPAN 150	Spanish II	4
SPAN 220	Spanish III	4

**The second 260-type course may be taken concurrently with upper-division courses.*

Majors and minors may request a waiver of one or both courses (SPAN 265 and/or SPAN 266) if they meet one or more of the following prerequisites: a) a score of 5 on the Spanish language or literature advanced placement (AP) exam, b) a score of 6 or 7 on the Spanish International Baccalaureate Higher-Level exam (IBHL), c) a score of 800 in the Spanish SAT subject exam or d) demonstration of advanced proficiency in spoken and written Spanish. Departmental approval is required in every case.

SPAN 265 and SPAN 266 may be taken concurrently. The second of these courses may be taken concurrently with a 300-level course.

Minor in Latin American Studies

The Latin American Studies minor recognizes the lasting importance of U.S.-Latin American relations. The overriding goal is to encourage students to learn more about Latin America by combining conceptual, area and language studies during their time at USC. The purpose of this 20-unit minor is to deepen students' knowledge of Latin America by offering courses from multiple disciplines within a context of close faculty guidance. The gateway requirement of one 4-unit course provides the student with options in both humanities and the social sciences, and the designated electives are similarly meant to allow students to blend these specialties.

For fulfillment of the requirements for the minor a student must choose four classes outside of his or her major department dedicated exclusively to the minor (which may be the same four classes). After the gateway course, these elective courses must be spread across at least two disciplines and/or departments.

Required Courses

One of the following 4-unit gateway introductory courses: REL 133, COLT 250, HIST 273, HIST 372, IR 364, IR 365, POSC 350

If the student has chosen a lower-division (100- or 200-level) course among the introductory choices, all area electives must be at the upper-division (300- or 400-) level.

Elective Requirements

Four courses (16 units) from the following list: AHIS 127, AHIS 128, AHIS 318, AHIS 319, AHIS 411, AMST 448, ANTH 425, COLT 250, ECON 340, GEOG 335, HIST 272, HIST

370, HIST 371, HIST 372, HIST 374, HIST 451, HIST 456, HIST 470, HIST 473, HIST 474, IR 364, IR 365, IR 408, IR 426, IR 454, IR 465, IR 466, PORT 250, POSC 350, POSC 430, POSC 431, SOCI 366, SOCI 420, SPAN 320, SPAN 321, SPAN 372, SPAN 462, SPAN 495

Graduate Degrees

The Ph.D. in Linguistics (Hispanic Linguistics) is offered through the Linguistics Department. See page 397xx for degree requirements. The M.A. and Ph.D., Comparative Studies in Literature and Culture (Spanish and Latin American Studies) are offered through the Comparative Studies in Literature and Culture program. See page 307xx for degree requirements.

Certificate in Foreign Language Teaching

The Certificate in Foreign Language Teaching provides certification in the theory and practice of second or foreign language teaching for student language teachers concurrently enrolled in graduate degree programs in foreign languages or related graduate programs at USC; for graduates of such programs who are teaching languages; for external candidates concurrently enrolled in similar programs in accredited colleges or universities; or for graduates of such programs who are teaching languages. The certificate is meant to supplement graduate study in the literature or linguistics of foreign languages. It is also meant to supplement classroom teaching. Therefore all candidates for this certificate are required to have taught a second or foreign language for at least one academic year at USC or elsewhere. At USC, this requirement and the course work requirements can be fulfilled concurrently, but external candidates are required to show proof of such teaching experience as a condition of admission.

In addition to teaching, certificate candidates must complete a minimum of four courses (minimum of 12 units) in four areas of study — linguistics, language acquisition, language teaching methodology, and the teaching of literacy or the literature or culture of a second or foreign language.

Requirements for Completion

The program consists of a practicum and a minimum of four courses: one each in linguistics, language acquisition, language teaching methods, and the teaching of literacy, literature or culture.

Linguistics: (minimum of 3 units) LING 411x Linguistics and Education or, with permission of instructor, an appropriate course in the linguistics of a particular language

Language Acquisition: (minimum of 3 units) LING 527 Second Language Acquisition or an appropriate alternative course

Language Teaching Methods: (minimum of 3 units) MDA 593 Practicum in Teaching the Liberal Arts or EALC 562 Teaching of the East Asian Languages or SPAN 511 Techniques and Procedures of Teaching Spanish as a Second Language or an appropriate alternative course

Literacy/Literature/Culture: (minimum of 3 units) An appropriate course in teaching of the literature or culture of a particular language

Courses of Instruction

SPANISH AND PORTUGUESE

SPANISH (SPAN)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

SPAN 020x Spanish for Reading Knowledge (o)

Preparation for the ETS standardized examination, with readings related to the student's major area. Offered upon sufficient demand. Not available for degree credit. Graded CR/NC.

SPAN 120 Spanish I (4) For students with limited proficiency in Spanish. Practice in listening comprehension, oral communication, elementary reading and writing. *Prerequisite:* Spanish placement exam.

SPAN 150 Spanish II (4) Continuation of SPAN 120; increased emphasis on listening comprehension, oral communication, reading, and writing. *Prerequisite:* SPAN 120.

SPAN 220 Spanish III (4) Continuation of SPAN 150; intensive work in listening comprehension, oral communication, reading and writing, with emphasis on free expression; readings related to Hispanic culture and civilization. *Prerequisite:* SPAN 150.

SPAN 231x Spanish for Business Communication:

The Job Search (2) Four-skills language and culture course. Culminating tasks executed in Spanish; professional dossier, simulated job search, formal face-to-face job interview, and telephone job interview. Not open to Spanish majors. Not available for major credit to Spanish majors. (Duplicates credit in SPAN 250.) *Prerequisite:* SPAN 220.

SPAN 232x Spanish for Business Communication:

The Business (2) Four-skills language and culture course. Culminating tasks executed in Spanish; written company profiles and a critical analysis of an NGO presented orally to the class. Not open to Spanish majors. Not available for major credit to Spanish majors. (Duplicates credit in SPAN 250.) *Prerequisite:* SPAN 220.

SPAN 233x Spanish for Business Communication:

The Case Study (2) Four-skills language and culture course. Culminating tasks executed in Spanish; case studies analyzed and presented in writing and orally. Not open to Spanish majors. Not available for major credit to Spanish majors. (Duplicates credit in SPAN 250.) *Prerequisite:* SPAN 220.

SPAN 240 Spanish IV (4, FaSp) Intensive review of Spanish grammar with emphasis on four skills. Audiovisual materials and readings related to Hispanic culture and civilization. *Prerequisite:* SPAN 220.

SPAN 245 Spanish Through Social Issues in Costa Rica (4, Sm) (Costa Rica Summer Program only). Intensive review of Spanish grammar with emphasis on four skills. Audiovisual materials, guest speakers, and readings related to the history and culture of Costa Rica. *Concurrent enrollment:* SPAN 220.

SPAN 250x Spanish for Business Communication

(4) Four-skills language and culture course for intermediate-high Spanish students interested in Business/Communications. Prepares students to communicate in the Spanish-speaking commercial market in a linguistically sensitive manner. Not available for credit to Spanish majors and minors. *Prerequisite:* SPAN 240.

SPAN 260 Advanced Spanish: Arts and Sciences

(4, FaSpSm) Development of students' oral and writing skills using literary and scientific materials; grammar review. (Duplicates credit in the former SPAN 266.) *Prerequisite:* SPAN 220.

SPAN 261 Advanced Spanish: Society and the Media

(4, FaSpSm) Analysis of cultural issues in the Spanish-speaking world. Discussions, presentations, writing assignments, and grammar instruction designed to improve students' proficiency in Spanish. (Duplicates credit in the former SPAN 265.) *Prerequisite:* SPAN 220.

SPAN 270 Spanish for Native Speakers (4, FaSp)

For speakers with an advanced level of oral proficiency, but no previous formal study of Spanish. Focus on grammar, spelling and punctuation, reading, and writing.

SPAN 280x Conversational Spanish (2, FaSp)

Discussions of short films, cultural and literary texts and other activities designed to improve conversational skills. Not for credit for Spanish majors. *Recommended preparation:* SPAN 220.

SPAN 301 Introduction to Hispanic Literature and Film (4, FaSpSm)

Introduction to critical reading and interpretation of poetry, narrative fiction, drama, and film from Spain and Latin America. *Prerequisite:* SPAN 260, SPAN 261.

SPAN 302 Survey of Film (4, FaSpSm)

A survey of Spanish and Latin American cinema from the silent film era to the present, acquainting students with various critical and theoretical approaches to cinema studies. *Prerequisite:* SPAN 260, SPAN 261; *recommended preparation:* SPAN 301.

SPAN 304 Survey of Fiction (4, FaSp)

A survey of Spanish and Latin American fiction from the Middle Ages to the present, acquainting students with various critical and theoretical approaches to narrative. *Prerequisite:* SPAN 260 and SPAN 261.

SPAN 306 Survey of Drama (4, FaSp)

A survey of Spanish and Latin American plays from the Middle Ages to the present, acquainting students with various critical and theoretical approaches to drama. (Duplicates credit in former SPAN 305.) *Prerequisite:* SPAN 260 and SPAN 261.

SPAN 308 Survey of Poetry (4, FaSp) A survey of Spanish and Latin American poetry from the Middle Ages to the present, acquainting students with various critical and theoretical approaches to verse. (Duplicates credit in former SPAN 305.) *Prerequisite:* SPAN 260 and SPAN 261.

SPAN 310 Structure of Spanish (4, FaSp) A systematic study of the structure of Spanish. Topics include fundamental aspects of the sound system; word classes; sentences and their meaning; linguistic change and variation; standard and colloquial usage. *Prerequisite:* SPAN 260 and SPAN 261.

SPAN 311 Advanced Spanish Through Contemporary Issues: Oral Emphasis (4, Sm) (Summer sessions abroad) Advanced Spanish with emphasis on grammar and oral communication. *Recommended preparation:* SPAN 260 or SPAN 261.

SPAN 315 Advanced Grammar and Translation (4, FaSp) Contrastive study of Spanish and English structures designed to explore the similarities and differences between the two languages and to familiarize students with translation techniques. Emphasis on a variety of text types with the aim of increasing linguistic and cultural appreciation of the Spanish language. *Prerequisite:* SPAN 260 and SPAN 261.

SPAN 316x Spanish for the Professions (4, max 8, FaSp) The language and culture of a particular area of study or profession, such as medicine and healthcare, political and social sciences, business and the law. Limited to 4 units for major or minor credit. *Prerequisite:* SPAN 260 and SPAN 261.

SPAN 320 Iberian and Latin American Cultures: Readings on Society (4, FaSp) Introduction to the study of Iberian and Latin American cultural patterns through readings on such topics as history, gender, ethnicity, and politics. (Duplicates credit in former SPAN 360 and former SPAN 370.) *Prerequisite:* SPAN 260 and SPAN 261.

SPAN 321 Iberian and Latin American Cultures: Readings on the Arts (4, FaSp) Introduction to the study of Iberian and Latin American cultural forms through readings on the visual arts, cinema, architecture and music. (Duplicates credit in former SPAN 360 and former SPAN 370.) *Prerequisite:* SPAN 260 and SPAN 261.

SPAN 341 Advanced Conversation and Culture (4) (Madrid Summer Program) Conversation based on study of Spanish art and architecture. Field trips.

SPAN 350 Cultural Cross-Currents of the Iberian Middle Ages (4, FaSp) Selected readings from 1040 to 1499 examining the rich cultural diversity of the Iberian Middle Ages in the symbiosis of Christian, Moslem and Jewish traditions. (Duplicates credit in former SPAN 377 and former SPAN 450.) *Recommended preparation:* SPAN 304 or SPAN 306 or SPAN 308.

SPAN 352 The Transatlantic Golden Age: New Worlds Real and Imagined (4, FaSp) Selected readings from 1500 to 1700 exploring Renaissance and baroque visions of the classical and new worlds. *Recommended preparation:* SPAN 304 or SPAN 306 or SPAN 308.

SPAN 372 Modern and Contemporary Latin American Fiction (4, FaSp) Study of major trends in Latin American fiction from the 1930s to the present with a focus on narrative experimentation. *Recommended preparation:* SPAN 304 or SPAN 306 or SPAN 308.

SPAN 373 Modern and Postmodern Spanish Fiction (4, FaSp) An exploration of the literary and filmic narratives of contemporary Spain focusing on the major historical and cultural movements of the 20th century. (Duplicates credit in former SPAN 378.) *Recommended preparation:* SPAN 304 or SPAN 306 or SPAN 308.

SPAN 375 Latin American Cultural and Literary Theory (4) (Enroll in COLT 375)

SPAN 380 Literature of Mexico (4) Principal writers and their works from Colonial times to the present. Non-majors may write assignments in English. *Recommended preparation:* advanced comprehension of oral and written Spanish.

SPAN 385 The Culture of Food in Hispanic Los Angeles (4, FaSp) Experiential learning and project-based course designed to familiarize students with the food culture of Hispanic Los Angeles. Students create Spanish language blogs about their experiences. *Prerequisite:* SPAN 260 and SPAN 261.

SPAN 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

SPAN 391 Introduction to Contemporary Spanish Literature (USC Madrid Center) (4) Readings in contemporary Spanish literature. Includes lectures by recognized Spanish writers and scholars.

SPAN 405 History of the Spanish and Portuguese Languages (4) Development of sounds, forms, words, meanings and structures from their origins to modern Spanish and Portuguese. *Prerequisite:* SPAN 310 or SPAN 315.

SPAN 412 Spanish Rhetoric and Style (4, FaSp) Close grammatical and rhetorical analysis of a variety of text types (general, literary, technical, journalistic) as the basis for practice in advanced written and oral expression as well as translation. *Prerequisite:* SPAN 310 or SPAN 315.

SPAN 413m Social and Geographic Varieties of Spanish (4, Fa) Historical, social, and cultural elements represented in the dialectal diversity of the Spanish language; fieldwork in bilingual communities in the United States. Majors prepare assignments in Spanish, non-majors in English. Conducted in Spanish and English. *Prerequisite:* reading knowledge of Spanish.

SPAN 420 Spanish Language Acquisition (4, FaSp) A study of the bilingual acquisition of Spanish and English by children, and of Spanish as a second language by adults; focus on linguistic, psychological and social factors. *Prerequisite:* SPAN 310 or SPAN 315.

SPAN 442 Advanced Reporting in Spanish (4) (Enroll in JOUR 442)

SPAN 455 Picaresque Itineraries: Empire and Its Discontents (4, FaSp) A study of the rise of the picaresque novel in Spain and Latin America as a medium for social, political, and cultural criticism. *Recommended preparation:* SPAN 304 or SPAN 306 or SPAN 308.

SPAN 460 Don Quijote: Text and Film (4, FaSpSm) A close reading of Cervantes' masterpiece and analysis of film adaptations of the novel. *Prerequisite:* SPAN 301.

SPAN 462 Literary Cartographies of Latin America and Spain, 1810-1898 (4, FaSp) Comparative analysis of Spanish and Latin American literatures with a focus on trans-Atlantic relations and the rise of such movements as romanticism, realism, and modernismo. *Recommended preparation:* SPAN 304 or SPAN 306 or SPAN 308.

SPAN 464 Introduction to Contemporary Spanish Theatre (4) (Madrid Center only) Historical evolution of the contemporary Spanish theatre; readings of dramatic texts supported by attendance at live stage performances. *Recommended preparation:* SPAN 304 or SPAN 306 or SPAN 308.

SPAN 465 Cultural Perspectives of the Iberian Peninsula (4, Sm) (Madrid Summer Program) Study of cultural plurality in the Iberian Peninsula. *Recommended preparation:* SPAN 260 or SPAN 261.

SPAN 466 Argentina, Society and the Arts (4, Sm) Study of the arts in the cultural landscape of Argentina and in the context of developments in Europe, Latin America and the United States. *Recommended preparation:* SPAN 260 or SPAN 261.

SPAN 469 Immigration in Spain (4, Sm) Sociopolitical issues of immigration in Spain, including economic impact, legal evolution, history, geographic location, and culture. *Prerequisite:* SPAN 260 or SPAN 261.

SPAN 470 Literature and Media in Latin America (4) (Enroll in COLT 470)

SPAN 481 Literature and Popular Culture (4, FaSp) An examination of popular culture and literary genres with an emphasis on the evolving canons and identities of Latin America and Spain. *Recommended preparation:* SPAN 304 or SPAN 306 or SPAN 308.

SPAN 482 Literature and the City (4, FaSp) An examination of the literary representations of urban spaces and cultures within the context of Iberian, Latin American, and U.S. Latino societies. *Recommended preparation:* SPAN 304 or SPAN 306 or SPAN 308.

SPAN 483 Literature and Gender (4, FaSp) An examination of gender, sexuality, and power in Iberian and Latin American literatures and cultures. *Recommended preparation:* SPAN 304 or SPAN 306 or SPAN 308.

SPAN 484 Studies in Visual and Material Culture (4, FaSp) An examination of the role of visual and material culture in cultural and social context in the Hispanic world, focusing on a selected time period and geographical region. *Recommended preparation:* SPAN 260 and SPAN 261 if taken for Spanish major credit.

SPAN 490x Directed Research (1–8, max 12) Individual research and readings. Not available for graduate credit.

SPAN 495 Seminar for Majors and Minors (4) Two options: (1) Study of a major work or writer, a principal literary theme or movement; or (2) a selected topic in Spanish language and linguistics. *Recommended preparation:* two courses in the upper division in the same area as the seminar topic (e.g., language or literature).

SPAN 499 Special Topics (2–4, max 8)

SPAN 501 Cultural Narratives of Spain and Latin America (4) Theoretical and methodological approaches to cultural narratives in Spanish and Latin American literary and cultural studies.

SPAN 511 Techniques and Procedures of Teaching Spanish as a Second Language (3) Practical classroom application of language teaching methods; evaluation of available textbooks; critique of master classes.

SPAN 513 Spanish Morphology and Phonology (3, FaSp) A survey of research on the interaction between Spanish morphology and phonology in light of critical readings and discussion of selected studies as contributions to the general theory of grammar. (Duplicates credit in former SPAN 512.)

SPAN 514 Spanish Syntax (3, FaSp) A survey of Spanish syntax in the light of critical readings and discussion of selected studies and their comparative contribution to grammatical theory.

SPAN 515 Spanish Grammar in Discourse (3, FaSp) Semantic and pragmatic approaches to the analysis of the structure of Spanish sentences and discourse.

SPAN 516 Historical Aspects of Spanish and Portuguese (3, FaSp) Processes of language change in the development of the Spanish and Portuguese languages from their origin in spoken Latin to their modern stage.

SPAN 517 Spanish Applied Linguistics (3, FaSp) Modern theories of first and second language acquisition and their application to Spanish.

SPAN 518 Spanish Sociolinguistics (3, FaSp) Principles of sociolinguistics and dialectology: sociolinguistic patterns in the Hispanic languages.

SPAN 525 Medieval and Early Modern Spanish World (4, max 8) Study of literature and other cultural artifacts pertaining to the Middle Ages in Spain and the early modern world in both Spain and the Americas.

SPAN 529 The Transatlantic 19th Century (4, max 8) Study of authors, texts and literary and cultural currents in Spain and Latin America in the 19th century.

SPAN 539 20th and 21st Century Spanish Literature and Culture (4, max 8) Study of cultural currents, authors, literary texts, films and other media in Spain in the 20th and 21st centuries.

SPAN 545 20th and 21st Century Latin American Literature and Culture (4, max 8) Study of cultural currents, authors, literary texts, films and other media in Latin America in the 20th and 21st centuries.

SPAN 590 Directed Research (1–12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

SPAN 593 Practicum in Teaching the Liberal Arts (2, FaSp) (Enroll in MDA 593)

SPAN 594abz Master's Thesis (2-2-0) Credit on acceptance of thesis. Graded IP/CR/NC.

SPAN 596 Research Methods in Spanish Linguistics (3) Examination of various research methods as applied to the study of the Spanish language; mechanics of organizing, conducting and presenting research in Spanish linguistics.

SPAN 602 Seminar in Spanish and Latin American Critical Theory (4, max 8) Major developments in literary criticism in Spain and Latin America from the early modern period to the present.

SPAN 603 Seminar in the Cultural History of Spain and Latin America (4, max 8) Literary and cultural currents in Spain and Latin America, with varying focus on genres, periods, movements and problems.

SPAN 604 Seminar in Gender and Sexuality in Spain and Latin America (4, max 8) Construction and representation of gender and sexuality in Spanish and Latin American literature and culture.

SPAN 606 Seminar in Visual Culture in Spain and Latin America (4, max 8) Major currents in film and other media in Spain and Latin America.

SPAN 650 Topics in Spanish and Latin American Literature and Culture (4, max 8) Study of topics in Spanish and Latin American literature and culture across periods, genres and nations.

SPAN 652 Seminar on a Major Topic in Hispanic Linguistics (3, max 9, FaSp) Analysis of selected topics of current interest as reflected primarily in the most recent literature.

SPAN 672 Seminar in Spanish Morphophonology (3, max 9, FaSp) Selected topics in Spanish morphology and phonology.

SPAN 674 Seminar on Spanish Syntax and Semantics (3, max 9, FaSp) Detailed analysis of topics in modern Spanish syntax and semantics.

SPAN 676 Seminar in Diachronic Aspects of the Hispanic Languages (3, max 9, FaSp) In-depth analysis of a particular topic in the historical development of the Hispanic languages.

SPAN 677 Seminar in Spanish Applied Linguistics (3, FaSp) Critical study and analysis of major issues related to the teaching and learning of Spanish as a first or a second language.

SPAN 678 Seminar in Hispanic Sociolinguistics (3, max 9, FaSp) Selected topics in Hispanic sociolinguistics: social and geographic language varieties, language contact, discourse analysis, synchronic variation and processes of change in Spanish.

SPAN 700 Colloquium in Hispanic Literature and Linguistics (1, max 3) Discussion and presentation of papers on a variety of topics in the areas of Hispanic language and literature. Graded CR/NC. *Prerequisite:* any 600 level Spanish seminar.

SPAN 790 Directed Research (1–12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

SPAN 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC.

PORTUGUESE (PORT)

PORT 120 Portuguese I (4, FaSp) For students with no proficiency in Portuguese. Practice in listening comprehension, oral communication, elementary reading and writing.

PORT 150 Portuguese II (4, FaSp) For students with some language proficiency in Portuguese; increased emphasis on listening, comprehension, oral communication, reading, and writing. Students will be required to take a Portuguese placement exam in the Spanish and Portuguese Department.

PORT 220 Portuguese III (4, FaSp) Intensive work in listening comprehension, oral communication, reading and writing, with emphasis on free expression; readings related to Portuguese culture and civilization. *Prerequisite:* PORT 150.

PORT 240 Portuguese IV (4) Four-skills course with review of grammar. Writing and reading intensive. Authentic materials related to Lusobrazilian culture and civilization. *Prerequisite:* PORT 220.

PORT 250g Cultures of Brazil and Lusophone Africa (4, FaSp) Comparative study of Brazil in the context of the Lusophone (Portuguese-speaking) world, especially Portugal's former colonies in Africa. Materials drawn from literature, visual culture, music and cultural theory.

PORT 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

PORT 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

Spatial Sciences Institute

Allen Hancock Foundation Building B55
(213) 740-5910
FAX: (213) 740-9687
Email: spatialsciences@dornsife.usc.edu
*Director: John P. Wilson, Ph.D.**

Faculty

*Professor: John P. Wilson, Ph.D.**

Professor of the Practice of Spatial Science: Karen K. Kemp, Ph.D.

Associate Professor (Research): Travis R. Longcore, Ph.D.

Assistant Professor (Teaching): Jennifer N. Swift, Ph.D.

Lecturers: Yao-Yi Chiang, Ph.D.; Jordan T. Hastings, Ph.D.; Su Jin Lee, Ph.D.; Katsuhiko Oda, Ph.D.; Flora Paganelli, Ph.D.; Edward Pultar, Ph.D.; Tarek Rashed, Ph.D.; Darren M. Ruddell, Ph.D.; Robert O. Vos, Ph.D.; Daniel N. Warshawsky, Ph.D.

**Recipient of university-wide or college teaching award.*

The programs and courses affiliated with the Spatial Sciences Institute explore the various ways in which space is used to acquire, represent, organize, analyze, model and visualize information. They seek to engage students enrolled in a range of academic programs in the natural and social sciences, the humanities and the professional schools.

The Bachelor of Science in GeoDesign is an interdisciplinary major offered by the Dornsife College of Letters, Arts and Sciences, the USC School of Architecture and the USC Price School of Public Policy. This degree prepares students for professional careers and/or graduate study.

The undergraduate minor in spatial studies explores how maps and related geospatial techniques may be used to describe, explore and interpret specific places and the natural and human processes.

The M.S. in Geographic Information Science and Technology provides state-of-the-art training in the core geographic information technologies (GIS, GPS and remote sensing, among others) and the underlying scientific principles and concepts that guide their design and use. This is an online program and may be taken by undergraduate students majoring in other disciplines as a progressive master's degree.

The Graduate Certificate in Geographic Information Science and Technology incorporates the same online core courses and electives as the master's degree and may be taken by master's and doctoral students majoring in other disciplines.

Undergraduate Program

Bachelor of Science in GeoDesign

The Bachelor of Science in GeoDesign is an interdisciplinary major offered by the Dornsife College of Letters, Arts and Sciences, the USC School of Architecture, and the USC Price School of Public Policy. This degree prepares students for professional careers and/or graduate study by engaging them in the acquisition, representation, analysis, modeling and visualization of spatial information set in the context of the built environment and policy. The underlying spatial principles, methods and tools can be used to support sustainable planning, facility and infrastructure management, the design of livable and healthy communities, and a series of regional planning applications to address pollution, water and energy needs, and the impact of population growth on the environment. The major electives provide students with opportunities to explore one or more facets of the built environment and a series of complementary analytical and visualization tools in more detail. Finally, the major is structured to provide students with sufficient elective credits to explore minors or other programs at USC so they can broaden their education to better prepare themselves for the next stage of their lives.

General Education Requirements

The university's general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. This program requires six courses in different categories, plus writing and diversity requirements, which together comprise the USC Core.

Major Requirements

A minimum grade of C, 2.0 (A = 4.0) must be earned in each of the core courses and the capstone course. In addition, a minimum grade point average of C (2.0) or higher must be achieved in the major to earn the geodesign degree. No more than 16 units of core courses may be taken prior to the successful completion of the geodesign pre-major requirements.

Pre-major Requirements

Both pre-major requirements must be taken for a letter grade and a minimum grade of C, 2.0 (A = 4.0), must be earned in each of the pre-major courses.

PRE-MAJOR COURSES (8 UNITS)		UNITS
ECON 203	Principles of Microeconomics	4
MATH 116	Mathematics for the Social Sciences	4
CORE COURSES (40 UNITS)		UNITS
ARCH 203	Visualizing and Experiencing the Built Environment	4

ARCH 303	Principles of Spatial Design I	4
ARCH 403	Principles of Spatial Design II	4
PPD 227	Urban Planning and Development	4
PPD 417	History of Planning and Development	4
PPD 425	Designing Livable Communities	4
SOCI 314	Analyzing Social Statistics	4
SSCI 301L	Maps and Spatial Reasoning	4
SSCI 382L	Principles of Geographic Information Science	4
SSCI 412L	GeoDesign Practicum	4

Major Electives (24 Units)

A suite of courses that further the development of practical, theoretical, and field knowledge and skills, including computer graphics, drawing, policy analysis, public finance, and statistics. Choose additional electives from the two lists equal to at least six courses (24 units) in all. At least two courses must come from Group A and two courses from Group B.

GROUP A: BUILT ENVIRONMENT		UNITS
ARCH 361L	Ecological Factors in Design	3
ARCH 432	People, Places and Culture: Architecture of the Public Realm	4
HIST 347	Urbanization in the American Experience	4
POSC 363	Cities and Regions in World Politics	4
PPD 410	Comparative Urban Development	4
PPD 420	Environmental Impact Assessment	4
PPD 461	Sustainable Communities, Policy and Planning	4
SOCI 331	Cities	4
GROUP B: DESIGN, ANALYSIS AND COMPUTATION		UNITS
ANTH 481	GIS for Archaeologists	4
ARCH 307	Digital Tools for Architecture	3
ARCH 370	Architectural Studies — Expanding the Field	2
FADN 102	Design Fundamentals	4
HIST 493	Quantitative Historical Analysis	4
PPD 306	Visual Methods in Policy, Management, Planning and Development	4
PPD 427L	Geographic Information Systems and Planning Applications	4
SOCI 365	Visual Sociology of the City and Its Residents	4

Capstone Course

All students will take four units of a capstone experience during their senior year. This may be fulfilled by taking SSCI 412L GeoDesign Practicum (4 units), which may be offered by any of the three units cross-listed (SSCI, ARCH and PPD) and will require students to use their knowledge and skills on a real project with a real client.

Honors

Candidates for the B.S. in GeoDesign can receive an honors degree by meeting these requirements: a 3.7 GPA in department courses at the time of graduation; completion of an honors research project or thesis under the guidance of a faculty member (SSCI 412L). Admission to the program is granted by the departmental undergraduate adviser in the semester preceding enrollment in SSCI 412L; students should have a 3.7 GPA in the major at this time.

Minor in Spatial Studies

The spatial studies minor requires a minimum of 20 units, consisting of one lower-division elective, three required courses and an upper-division elective. The minor offers students an opportunity to examine some of the major challenges of the 21st century (climate change, human health and sustainability, urbanization and cultural homogenization, among others) through a spatial lens.

REQUIRED COURSES (12 UNITS)

		UNITS
SSCI 301L	Maps and Spatial Reasoning	4
SSCI 382L	Principles of Geographic Information Science	4
SSCI 483L	Spatial Sciences Practicum	4

LOWER-DIVISION ELECTIVES (4 UNITS)

		UNITS
AMST 100	Los Angeles and the American Dream	4
ANTH 201	Introduction to Social Anthropology	4
ANTH 202	Introduction to Archaeology	4
ARCH 105L	Fundamentals of Design Communication	2
ARCH 114	Architecture: Culture and Community	2
ARCH 220	The Architect's Sketchbook	2
BISC 102Lx	Humans and Their Environment	4
BISC 140	Human Impact on the Ocean Planet	4
CLAS 212L	Archaeology: Interpreting the Past	4
GEOL 108L	Crises of a Planet	4
GEOL 150L	Climate Change	4
HIST 240	The History of California	4
POSC 265	Environmental Challenges	4
PPD 245	The Urban Context for Policy and Planning	4
SOCI 200	Introduction to Sociology	4
SSCI 265L	The Water Planet	4

UPPER-DIVISION ELECTIVES (4 UNITS)

		UNITS
ANTH 481L	GIS for Archaeologists	4
ARCH 432	People Places Culture: Architecture of the Public Realm	4

GEOG 393	Field Techniques	4
JOUR 422	Visual Journalism	4
PPD 306	Visual Methods in Policy, Management, Planning and Development	4
PPD 427L	Geographic Information Systems and Planning Applications	4
SOCI 314	Analyzing Social Statistics	4
SOCI 365	Visual Sociology of the City and Its Residents	4

Graduate Degrees**Master of Science in Geographic Information Science and Technology****AHF B55B****(213) 740-8298****Email: kkelsey@usc.edu***Director: John P. Wilson, Ph.D.*

The online M.S. in Geographic Information Science and Technology requires 28 units of graduate work and provides state-of-the-art training in the core geographic information technologies (geographic information systems, global positioning systems and remote sensing, among others) and the underlying scientific principles and concepts that guide their design and use. The individual courses incorporate multiple curricular pathways tailored to the increasingly diverse backgrounds, occupations and applications that rely on geospatial data, analysis and visualization.

Course Requirements

Twenty-eight units of graduate work are required.

CORE COURSES (16 UNITS)

		UNITS
SSCI 581	Concepts for Spatial Thinking	4
SSCI 582	Spatial Databases	4
SSCI 587	GPS/GIS Field Techniques	4
SSCI 594ab	Master's Thesis	2-2

ELECTIVES (12 UNITS)

		UNITS
SSCI 583	Spatial Analysis and Modeling	4
SSCI 585	Geospatial Technology Project Management	4
SSCI 586	GIS Programming and Customization	4
SSCI 588	Remote Sensing for GIS	4
SSCI 589	Cartography and Visualization	4
SSCI 591	Web GIS	4
SSCI 592	Mobile GIS	4

All electives are chosen in direct consultation with the student's academic adviser based on background, academic interests, etc.

The courses in this program are open to students living and/or working anywhere, including students at USC's Los Angeles, Orange County, Sacramento and Washington, D.C. centers. The master's program can be completed in two to three years as long as students take one or two courses in each of the fall, spring and summer semesters.

Admission Requirements

Four groups of students are served by this program:

1. New students who wish to apply directly to the geographic information science and technology master's program.
2. Students currently enrolled in the geographic information science and technology graduate certificate program since this certificate program may serve as a possible "stepping stone" toward the master's program.
3. Students currently matriculated in a USC master's or doctoral degree program.
4. USC undergraduate students who want to stay for a fifth year and earn both bachelor's and master's degrees.

Candidates for admission among the first two groups of students must have: (1) a B.A. or B.S. degree or its international equivalent; (2) a minimum 3.0 GPA (A = 4.0). All course work taken at the undergraduate level is used to calculate the GPA. Exceptions will be made in cases of very high GRE scores or some other compelling evidence of potential to excel in graduate studies (e.g., outstanding letters of recommendation). Preference will be given to candidates with significant professional experience working with geographic information systems and related geospatial technologies.

Application Procedures

Applicants are required to submit the following documents: (1) completed application for admission, which can be found online at usc.edu/admission/graduate; (2) statement of purpose; (3) official transcripts from all schools previously attended; (4) two letters of recommendation; and (5) results of the GRE General Test. International students must submit TOEFL scores with a minimum score of 100 on the Internet-based examination, or an IELTS score of 7.

The statement of purpose should be uploaded into the online application. This statement should: (1) describe the student's motivation, field of interest and career goals; and (2) identify potential projects that the student might pursue for the master's thesis project.

The master's program utilizes rolling admissions and enrollment based on the standard academic calendar. This means that students may start the program in either the fall, spring or summer semesters.

Those interested in learning more about this program should contact Kate Kelsey, University of Southern California, 3616 Trousdale Parkway, AHF B55B, Los Angeles, CA 90089-0374.

Graduate Certificate in Geographic Information Science and Technology**AHF B55B****(213) 740-8298****Email: kkelsey@usc.edu***Director: John P. Wilson, Ph.D.*

The online Graduate Certificate in Geographic Information Science and Technology requires 16 units of graduate work and provides state-of-the-art training in some of the core geographic information science technologies and the underlying scientific principles and concepts that guide their design and use.

Course Requirements

Sixteen units of graduate work are required.

CORE COURSES (12 UNITS)		UNITS
SSCI 581	Concepts for Spatial Thinking	4
SSCI 582	Spatial Databases	4
SSCI 587	GPS/GIS Field Techniques	4
ELECTIVES (4 UNITS)		UNITS
SSCI 583	Spatial Analysis and Modeling	4
SSCI 585	Geospatial Technology Project Management	4
SSCI 586	GIS Programming and Customization	4
SSCI 588	Remote Sensing for GIS	4
SSCI 589	Cartography and Visualization	4
SSCI 591	Web GIS	4
SSCI 592	Mobile GIS	4

The courses in this program are open to students living and/or working anywhere, including students at USC's Los Angeles, Orange County, Sacramento and Washington, D.C. centers. The certificate program can be completed in one to two years as long as students take one or two courses in each of the fall, spring and summer semesters. The graduate certificate program can serve as a possible "stepping stone" toward the geographic information science and technology master's degree program.

Admission Requirements

Two groups of students are served by this program:

1. New students who wish to apply directly to the geographic information science and technology graduate certificate program.
2. Students currently matriculated in a USC master's or doctoral degree program (other than the M.S. in geographic information science and technology).

Candidates for admission among the first group of students must have: (1) a B.A. or B.S. degree or its international equivalent; (2) a minimum 3.0 GPA (A = 4.0) undergraduate GPA. All course work taken at the undergraduate level is used to calculate the GPA. Exceptions will be made in cases of very high GRE scores or some other compelling evidence of potential to excel in graduate studies (e.g., outstanding letters of recommendation). Preference will be given to candidates with significant professional experience working with geographic information systems and related geospatial technologies.

Application Procedures

Applicants are required to submit the following documents: (1) completed application for admission, which can be found online at usc.edu/admission/graduate; (2) statement of purpose; (3) official transcripts from all schools previously attended. International students must submit TOEFL scores with a minimum score of 100 on the Internet-based examination, or an IELTS score of 7.

The graduate certificate program utilizes rolling admissions and enrollment based on the standard academic calendar. This means that students may start the program in either the fall, spring or summer semesters.

Those interested in learning more about this program should contact Kate Kelsey, University of Southern California, 3616 Trousdale Parkway, AHF B55B, Los Angeles, CA 90089-0374.

Sustainable Cities Graduate Certificate

This multidisciplinary certificate program provides USC master's and doctoral students with a specialization in urban sustainability problems resulting from the growth of cities caused by natural population increase and massive rural-to-urban population flows. See the USC Price School of Public Policy, page 893xx.

Courses of Instruction

SPATIAL SCIENCES INSTITUTE (SSCI)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

SSCI 101 Workshop in Spatial Analysis (2, FaSp)

Introduction to geospatial technologies and data as creative tools for supplementing traditional forms of academic work across the sciences, social sciences, and the humanities.

SSCI 265Lg The Water Planet (4, FaSpSm) An exploration of earth's water, ranging from water properties, chemistry, and pollution, to groundwater dynamics, watershed processes, and oceanic-atmospheric circulation. Implications for past and future societies. Lecture and laboratory. (Duplicates credit in the former GEOG 265L.)

SSCI 301L Maps and Spatial Reasoning (4, Fa) Role of maps and spatial reasoning in the production and use of geographic information for representing and analyzing human and environmental activities and events.

SSCI 382L Principles of Geographic Information Science (4, Sp) The various ways in which geography can be used to acquire, represent, organize, analyze, model and visualize information. Laboratories are organized around ArcGIS software suite. *Recommended preparation*: SSCI 301L.

SSCI 412L GeoDesign Practicum (4, FaSp) Application of design concepts, planning protocols and spatial analysis skills to a complex planning or design problem sponsored by a local public, private or not-for-profit client in a studio setting. Open only to seniors in GeoDesign major. *Prerequisite*: ARCH 403, PPD 425, SOCI 314, SSCI 483L.

SSCI 483L Spatial Science Practicum (4, Sp) Application of GIS concepts and skills to a local opportunity or problem in a studio setting. May involve site visits, community contact, and presentations. *Prerequisite*: SSCI 382L.

SSCI 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit. Open only to juniors and seniors.

SSCI 499 Special Topics (2-4, max 8) Intensive study of selected topics or regions.

SSCI 581 Concepts for Spatial Thinking (4, FaSpSm)

The unique characteristics and importance of spatial information as they relate to the evolving science, technology, and applications of Geographic Information Systems. (Duplicates credit in the former GEOG 581.)

SSCI 582 Spatial Databases (4, FaSpSm) Design, implementation, and interrogation of relational, object-oriented and other types of geospatial databases. (Duplicates credit in the former GEOG 582.) *Recommended preparation*: SSCI 581.

SSCI 583 Spatial Analysis and Modeling (4, FaSp)

Examination of the process of geographic abstraction and modeling in relation to the different data models and spatial analysis operations available in current GIS. (Duplicates credit in the former GEOG 583.) *Recommended preparation*: SSCI 581.

SSCI 585 Geospatial Technology Project Management (4, FaSm)

Concepts, principles, and use of project management tools and the people issues encountered running GIS projects. (Duplicates credit in the former GEOG 585.) *Recommended preparation*: SSCI 581.

SSCI 586 GIS Programming and Customization (4, FaSp)

Design, coding, and implementation of GIS-based software and models with Java and Visual Basic.NET programming languages. (Duplicates credit in the former GEOG 586.) *Recommended preparation*: SSCI 581.

SSCI 587 GPS/GIS Field Techniques (4, FaSpSm)

Field exploration of methods and problems of data acquisition and integration using GPS/GIS data collection systems at Wrigley Marine Science Center on Santa Catalina Island. (Duplicates credit in the former GEOG 587.)

SSCI 588 Remote Sensing for GIS (4, FaSp)

Principles of remote sensing, satellite systems, and role of remote sensing data in GIS applications. (Duplicates credit in the former GEOG 588.) *Recommended preparation*: SSCI 581.

SSCI 589 Cartography and Visualization (4, FaSm)

Principles of visual perception, spatial cognition and cartographic design and their contributions to the maps, animations, virtual reality and multimedia displays produced with modern GIS. (Duplicates credit in the former GEOG 589.) *Recommended preparation*: SSCI 581.

SSCI 590 Directed Research (1-12, FaSpSm)

Research leading to the master's degree in cognate fields. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

SSCI 591 Web GIS (4, FaSm)

Design, implementation, and technological building blocks (including GML) for distributed web-based services. (Duplicates credit in the former GEOG 591.) *Recommended preparation*: SSCI 581.

SSCI 592 Mobile GIS (4, SpSm) Design, coding, and implementation of mobile GIS applications using the Java and Javascript object-oriented programming languages. *Recommended preparation:* SSCI 591.

Thematic Option

**College Academic Services Building 200
(213) 740-2961
(800) 872-2961**

Email: thematicoption@dornsife.usc.edu
dornsife.usc.edu/thematic-option

Director: Pennelope Von Helmlot, Ph.D.

Thematic Option, the university's general education core honors program, is an alternative to regular core general education requirements. The program is interdisciplinary and provides a strong intellectual community.

The program teaches students to formulate ethical questions, to analyze and understand the reasoning behind views that differ from their own, to recognize the roles that historical, political and social forces play in matters of personal choice, and to express their views coherently in writing. Thematic Option can be arranged to fit any major.

To maintain small classes and allow for extensive discussion, Thematic Option is limited to 200 students each year. Students must be highly motivated, with a record of academic achievement. The average Thematic Option student has cumulative SAT scores above 2200 and an "A" high school GPA. The program is rigorous and requires extensive reading and writing.

Program Requirements

The Thematic Option honors curriculum consists of four interdisciplinary core classes taught around distinct themes: CORE 101 Symbols and Conceptual Systems; CORE 102 Culture and Values; CORE 103 The Process of Change in Science; and CORE 104 Change and the Future.

CORE 111 Writing Seminar I and CORE 112 Writing Seminar II make up the eight units of writing to meet the university requirement. The classes are accompanied by individual, bi-weekly tutorials. CORE 111, which requires concurrent enrollment with an affiliated CORE 102, focuses on critical thinking and analysis, focusing on academic argument and reasoning through close reading of primary texts. CORE 112 teaches students to convey complex ideas and to advance sophistication of essay structure, grounded argument, and to identify and address specific audiences persuasively in academic discourse.

The core curriculum is supplemented by two theme courses — one in the natural sciences and the other in either the humanities or the social sciences — chosen in consultation with a Thematic Option adviser.

Liberal Arts Modules

Liberal Arts Modules are a college-wide honors opportunity that bring together students with substantial training in their respective disciplines to study a common subject area using multiple approaches while participating in a cross-disciplinary dialogue.

SSCI 594abz Master's Thesis (2-2-0, FaSpSm) Credit on acceptance of thesis. Graded CR/NC.

Liberal Arts Modules provide a unique opportunity for interdisciplinary study with peers and faculty from different disciplines. The themes and topics change each semester depending on faculty participation. Students are exposed to different approaches to societal issues, gain experience working collaboratively with peers from other academic areas, apply their knowledge to new subject areas and focus sustained critical attention on disciplinary methods of inquiry.

A typical module includes four classes: three small seminars and one CORE 498 course. The program requires simultaneous enrollment in one of the three seminars and in CORE 498, for a total of 8 units.

Students with at least junior standing and a major/minor GPA of at least 3.0 are eligible to apply. Preference is given to students pursuing double majors or other major/minor combinations in the liberal arts. Students graduating with a B.A. or USC Dornsife College of Letters, Arts and Sciences B.S. degree who complete a module and maintain a cumulative GPA of 3.5 will have "Distinction in Liberal Arts" listed on their USC Transcript.

REQUIREMENTS (8 UNITS)

Simultaneous registration in CORE 498 and a Special Topics 499 class that is part of the Liberal Arts Module.

Thematic Approaches to Humanities and Society Minor

The interdisciplinary minor in Thematic Approaches to Humanities and Society allows students to examine a range of thematic and theoretical approaches to understanding culture and society from multiple standpoints in the humanities. The minor is rich in course and schedule options, enabling students with an interest in the humanities to continue their studies. It also includes co-curricular events and advisement from Thematic Option staff. Thematic approaches to humanities and society builds on the intellectual community developed in the Thematic Option honors program and is open to all interested students.

The minor focuses on themes such as interdisciplinary perspectives and modes of inquiry; approaches to criticism and history; reification, ideology, contextualization; and knowledge, human diversity and social relations. Students choose six 4-unit classes, including one lower-division elective, one upper-division Thematic Option class (CORE 301 Modes of Inquiry), and four upper-division electives. Students also complete a 2-unit reading salon (CORE 200 Liberal Arts Reading Salon).

REQUIREMENTS, LOWER-DIVISION (CHOOSE ONE, 4 UNITS)

CLAS 150, CLAS 151, CORE 102, HIST 101, HIST 102, PHIL 115, REL 132

SSCI 599 Special Topics (2-4, max 8) Seminar in selected topics in the spatial sciences.

COURSE REQUIREMENTS (6 UNITS)		UNITS
CORE 200	Liberal Arts Reading Salon	2
CORE 301	Modes of Inquiry	4

REQUIREMENTS, UPPER-DIVISION (16 UNITS)

Enroll in four of the following, at least one from List A, one from List B and not more than one from List C. Not more than two may come from any one department. Courses must be chosen in consultation with a Thematic Option adviser.

LIST A

Early: CLAS 310, CLAS 320, CLAS 333, CLAS 470, EALC 340, EALC 345, EALC 350, EALC 355, EALC 365, PHIL 345, REL 311, REL 315, REL 317

Modern: COLT 426, COLT 445, EALC 332, EALC 335, EALC 342, EALC 352, EALC 354, FREN 446, GERM 370, GERM 372, PHIL 337, PHIL 355, PHIL 437, REL 340, SLL 330, SLL 344

LIST B

Humanities and Society: COLT 448, COLT 475, ENGL 473, ENGL 474, FREN 370, ITAL 340, REL 366, REL 462, SLL 345, SLL 348

Critical Approaches: CLAS 380, COLT 391, COLT 401, COLT 454, ENGL 472, ENGL 479, ENGL 480, LING 466, PHIL 361, PHIL 445

LIST C

Social Science Approaches: ANTH 372, HIST 201, HIST 329, IR 325, POSC 381, POSC 476, SOCI 350, SOCI 360

Courses of Instruction

THEMATIC OPTION (CORE)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

CORE 101 Symbols and Conceptual Systems: Thematic Option Honors Program (4, FaSp) Study of the structures through which we shape our experience in religion, philosophy, literature, music, and the visual arts, and of competing theories of interpretation. Students may not take this course on a P/NP basis.

CORE 102 Culture and Values: Thematic Option Honors Program (4, Fa) Systematic reasoning about values and ways of living; close reading of major texts within the Western tradition; Biblical and classical through contemporary sources. Students may not take this course on a P/NP basis.

CORE 103 The Process of Change in Science: Thematic Option Honors Program (4, FaSp) Critical problems in the development of scientific thought, studied as vehicles for understanding the content and structure of the sciences. Specific subject matter in selected scientific disciplines will be presented. Students may not take this course on a P/NP basis.

CORE 104 Change and the Future: Thematic Option Honors Program (4, FaSp) Analysis of historical change; social and political theory and revolutionary thought; introduction to competing images of future states of affairs; the continuing process of change. Students may not take this course on a P/NP basis.

CORE 111 Writing Seminar I: Thematic Option Honors Program (4, Fa) Students may not take this course on a P/NP basis.

CORE 112 Writing Seminar II: Thematic Option Honors Program (4, Sp) Students may not take this course on a P/NP basis.

CORE 195 Summer Seminar (3, Sm) An honors course for high school students in summer; each section focuses on a topic in the arts or humanities, social or natural sciences.

CORE 200 Liberal Arts Reading Salon (2, FaSp) Critical readings of a series of texts in the liberal arts designed to promote discussion of important themes, theoretical approaches, research directions, and interdisciplinary connections. Graded CR/NC.

CORE 301 Modes of Inquiry (4, FaSp) Modern tools of cultural and discursive analysis which seek to demystify "the natural," as it appears in the formation of cultures, their institutions, and individuals.

CORE 498 Honors in Liberal Arts (4, FaSp) Advanced interdisciplinary course on the development of a general theme or topic. Critical analysis of the relation between modes of inquiry and objects of study. Students must be simultaneously enrolled in a selected special topics 499 course that has been approved as part of the College's Liberal Arts Modules project.

CORE 499 Special Topics (2-4, max 12) Intensive interdisciplinary exploration of a selected theme, problem process, or period.

CORE 601 Teaching Analytical Writing Through Readings in the Humanities (1, max 4, Fa) Theories and practices in the university-level teaching of close-reading and analytical writing, using texts central to Western tradition. Graduate student professionalism through topical workshops and discussions. Open to assistant lecturers and teaching assistants only. Graded CR/NC.

The Writing Program

Jefferson Building 150 (JEF 150)
(213) 740-1980
Email: writprog@usc.edu
dornsife.usc.edu/writing-program
Director: John Holland

Associate Professors (Teaching): Norah E. Ashe, Ph.D.; Diana Y. Blaine, Ph.D.; Stephanie L. Bower, Ph.D.; James O. Brecher, Ph.D.; Jerome J. Edwards, MPW; Kevin Egan, Ph.D.; William S. Feuer, Ph.D.; Phyllis J. Franzek, Ph.D.; Nathalie Joseph, Ph.D.; Stephen John Mack, Ph.D.; Matthew J. Manson, Ph.D.; Mark Christopher Marino, Ph.D.; Geoffrey Cole Middlebrook, Ph.D.; John R. Murray, Ed.D.; Erika Rachel Nanes, Ph.D.; Sandra Marie Ross, M.A.; Scott A. Smith, Ph.D.; Robert Rex Waller Jr., MPW

Assistant Professors (Teaching): LauraAnne Adler, Ph.D.; Andrew M. De Silva, MPW; Lacey A. Donohue, Ph.D.*; Jay T. Fisher, MPW; Indra Narayan Mukhopadhyay, Ph.D.; Eric Rawson, Ph.D.; David Tomkins, Ph.D.; William Y. Wyatt, MPW

Lecturers: Michael T. Bunn, Ph.D.; Jessica Wells Cantiello, Ph.D.; Jeffrey A. Chisum, Ph.D.; James J. Condon VII, Ph.D.; William T. Gorski, Ph.D.; Farida Habeeb, Ph.D.; Steve Gary Posner, MPW; Shefali Rajamannar, Ph.D.; Deborah M. Sims, Ph.D.; Shilarna Stokes, MFA; Ellen Wayland-Smith, Ph.D.

The goal of Writing Program courses is to develop the critical thinking, reading and writing skills that are necessary for success in all college work. Small classes and tutorials in the Writing Center enable students to receive frequent responses to their writing and highly individualized composition instruction. Students must complete WRIT 140 (or its equivalent) and an advanced writing course, WRIT 340, to meet the university's writing requirement. In all of its courses, the Writing Program employs a rhetorically based process approach to writing instruction.

Lower-division Requirement

WRIT 140 Writing and Critical Reasoning is offered in affiliation with courses from the "Social Issues" category of the General Education program. WRIT 140 focuses on the rhetorical principles and techniques necessary for successful college-level writing. Special attention is paid to critical thinking and reading, sentence-level fluency, research techniques, and the elements of academic argument and reasoning. In lieu of WRIT 140, certain students from the Schools of Architecture, engineering and music majors are permitted to take WRIT 130 Analytical Writing, a non-affiliated course with similar curricular objectives. Neither WRIT 130 nor WRIT 140 will satisfy this requirement if taken on a Pass/No Pass basis.

Advanced Writing Requirement

All students at USC, except those who satisfy their general education requirements through the Thematic Option Program, must complete WRIT 340 Advanced Writing, an upper-division course designed to help students write on topics related to their disciplinary or professional interests. Students usually enroll in WRIT 340 in the junior year, and may not take the course earlier than their sophomore year. Different schools within the university offer sections of this course. Students should consult their major departments to determine which version of WRIT 340 best complements their program of study. WRIT 340 will not satisfy the university's writing requirement if taken on a Pass/No Pass basis.

All classes that meet the university's advanced writing requirement teach students to write clear, grammatical, well-structured prose; to discover and convey complex ideas critically; and to appreciate the nuances of effective argumentation. The principal aim of the requirement is to develop a student's capacity to formulate thoughtful and compelling writing for specific academic, professional and public audiences.

Preparatory Course Work

Some students are better served by taking a preparatory course before they enroll in WRIT 140. Entering freshmen who score below a specified level on the

verbal portion of the SAT take the University Writing Examination. Based on the results of this examination, certain students enroll in WRIT 120 Introduction to College Writing or WRIT 121 Introduction to College Writing in a Second Language during their first semester at USC.

International students take the University Writing Examination after having completed any course work required by the American Language Institute.

Transfer Credit

Students may complete the lower-division requirement by completing an equivalent second-semester composition course that is taken for a letter grade option (not Pass/No Pass) at another institution prior to enrolling at USC or after high school graduation. Equivalent transfer credit is determined by the university's articulation officer. The advanced writing requirement must be completed at USC.

Time Limits

Students should complete the lower-division writing course requirement by the end of their first year at USC and must complete it before they enroll in their sixty-fifth unit. Transfer students who have not completed the lower-division requirement prior to entering USC should enroll in WRIT 140 during their first semester at USC, and must enroll in WRIT 140 no later than their nineteenth unit (second semester) at USC.

Courses of Instruction

WRITING (WRIT)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

WRIT 095x Writing Tutorial (1, FaSpSm) Individualized instruction in writing to support instruction in WRIT 130 or WRIT 140. Graded CR/NC. Not available for degree credit. *Concurrent enrollment:* WRIT 130 or WRIT 140.

WRIT 120 Introduction to College Writing (4, FaSpSm) Intensive instruction and practice in the writing process. Focuses upon the formal conventions and conceptual expectations of college writing, with emphasis upon the grammatical, stylistic, and rhetorical techniques required in successful writing. Graded CR/NC. Limited to and required of students who score below specified level on the USC Writing Examination.

WRIT 121 Introduction to College Writing in a Second Language (4, FaSp) Intensive instruction and practice in the writing process for non-native speakers of English. Focuses on the formal and conceptual conventions of college writing, with emphasis upon the grammatical, stylistic, and rhetorical techniques required in successful writing. Graded CR/NC. Limited to and required of students who score below specified level on the USC Writing Examination.

WRIT 130 Analytical Writing (4, Sp) Focuses on analytical and argumentative writing skills requisite to academic and professional writing. Emphasizes logical analysis of texts and other data, effective use of evidence, ethical argumentation, and stylistic and grammatical fluency. Enrollment limited to specified groups of students. Students must achieve a satisfactory score on the verbal portion of the SAT, the USC Writing Examination, or credit for WRIT 120 or WRIT 121 before enrolling in WRIT 130.

WRIT 140 Writing and Critical Reasoning (4, FaSpSm) Focuses on analytical and argumentative writing skills requisite to academic and professional writing. Emphasizes logical analysis of texts and other data, effective use of evidence, ethical argumentation, and stylistic and grammatical fluency. Requires concurrent enrollment with an affiliated general education course in the social issues category. Students must achieve a satisfactory score on the verbal portion of the SAT, the USC Writing Examination, or credit in WRIT 120 or WRIT 121 before enrolling in WRIT 140.

WRIT 340 Advanced Writing (3-4, FaSpSm) Instruction in writing for various audiences on topics related to a student's professional or disciplinary interests, with some emphasis on issues of broad public concern. *Prerequisite:* WRIT 130 or WRIT 140.

WRIT 440 Writing in Practical Contexts (4, FaSpSm) Advanced training in analytical and argumentative writing for particular purposes, in professional and practical contexts. *Prerequisite:* CORE 112 or WRIT 340.

WRIT 501ab Theory and Practice in Teaching Expository Writing (1-1, Fa) Pedagogical application of rhetorical and linguistic theory to teaching university-level expository writing. Accompanies supervised teaching. Limited to assistant lecturers and teaching assistants. Graded CR/NC.

USC Annenberg

School for Communication
and Journalism



The USC Annenberg School for Communication and Journalism was recently recognized by the online Education Portal as having one of the three most promising public relations programs in the nation. Specifically praised was the research-focused Strategic Communication and Public Relations Center, which has earned recognition for its work in identifying best practices, new ideas and standards in public relations.

The USC Annenberg School for Communication and Journalism is a national leader in education and scholarship in the fields of communication, journalism, public diplomacy and public relations. The school offers a comprehensive curriculum emphasizing the core skills of leadership, innovation, service and entrepreneurship and drawing upon the resources of a networked university located in the media capital of the world. USC Annenberg's commitment to the converged practice of communication and journalism, interdisciplinary studies, and collaboration makes it unique among peer institutions. Students learn from theory and practice, and the school's programs put it at the crossroads of media, entertainment technology, and globalization.

The school's nationally accredited journalism program provides experience for students in all media platforms, with a digital newsroom, state-of-the-art editing equipment for radio and television news production and the opportunity to work at on-campus media outlets. The school's public relations program prepares students to thrive in advocacy communication, learning to write and communicate targeted messages across media platforms. The School of Communication's multidisciplinary curriculum explores how human interaction and technology affect communities, businesses, nations and the world, preparing students for careers in communication, persuasion and leadership. USC Annenberg's active internship program and study abroad opportunities give students the broad, global perspective required to be successful professionals.

USC Annenberg alumni fill top posts in the communication and media industries, and remain an invaluable resource to students and faculty. USC Annenberg's more than 100 faculty members have been recognized in diverse fields, and their expertise challenges students to become communication leaders of tomorrow.

Administration

Ernest James Wilson III, Ph.D., *Dean, Walter H. Annenberg Chair in Communication*

Abigail Kaun, Ph.D., *Associate Dean, Academic Programs and Student Affairs*

Margaret McLaughlin, Ph.D., *Associate Dean, Faculty Affairs and Research, Professor of Communication*

Bruce Missaggia, MBA, CFM, CMA, CRA, *Associate Dean, Finance and Programs*

Diana O'Leary, M.S., *Associate Dean, External Relations*

Larry Gross, Ph.D., *Vice Dean, Director, School of Communication*

Geneva Overholser, M.A., *Director, School of Journalism*

Allyson Hill, M.A., *Assistant Dean, Admissions*

James Vasquez, B.A., *Assistant Dean, Operations*

School of Communication

USC Annenberg School for Communication and Journalism 305

(213) 740-0900 (academic inquiries)

(213) 740-3951 (administrative)

(213) 821-0770 (admission inquiries)

FAX: (213) 740-3913

annenberg.usc.edu

Director: Larry Gross, Ph.D.

Associate Director: Imre S. Meszaros, Ed.D.

Assistant Director: Dorine Lawrence-Hughes, J.D.

Faculty

Walter H. Annenberg Chair in Communication: Ernest J. Wilson III, Ph.D.

University Professor and Annenberg Family Chair in Communication Leadership: Geoffrey Cowan, LL.B.

Wallis Annenberg Chair in Communication and Journalism: Manuel Castells, Ph.D.

Norman Lear Chair in Entertainment, Media and Society: Martin H. Kaplan, Ph.D.

Provost Professor of Communication, Journalism and Cinematic Arts: Henry Jenkins, Ph.D.

Professors: Jonathan D. Aronson, Ph.D.; Sandra Ball-Rokeach, Ph.D.; Sarah Banet-Weiser, Ph.D.*; Manuel Castells, Ph.D.; Peter Clarke, Ph.D.; Michael J. Cody, Ph.D.; Geoffrey Cowan, LL.B.*; Nicholas Cull, Ph.D. (*Chair, Public Diplomacy Master's Program*); Janet Fulk, Ph.D.; G. Thomas Goodnight, Ph.D. (*Chair, Doctoral Program*); Larry Gross, Ph.D.; Thomas A. Hollihan, Ph.D.; Andrea Hollingshead, Ph.D.; Henry Jenkins, Ph.D.; Doe Mayer, M.A. (*Cinematic Arts*); Margaret McLaughlin, Ph.D.; Lynn C. Miller, Ph.D.; Peter R. Monge, Ph.D.*; Ernest J. Wilson III, Ph.D.

Associate Professors: Francois Bar, Ph.D.; Joshua Kun, Ph.D.; Randall Lake, Ph.D.; Andrew Lakoff, Ph.D. (*Dornsife, Anthropology and Sociology*); Sheila T. Murphy, Ph.D.; Stephen O'Leary, Ph.D.; Kwan Min Lee, Ph.D.; Patricia Riley, Ph.D. (*Director, Global Communication Master's Program*); Kenneth K. Sereno, Ph.D.*; Stacy Smith, Ph.D.; Douglas Thomas, Ph.D.; Dmitri Williams, Ph.D.

Assistant Professors: Michael Ananny, Ph.D.; Taj Frazier, Ph.D.; Yu Hong, Ph.D.; Lian Jian, Ph.D.; Kjerstin Thorson, Ph.D. (*Journalism*)

Clinical Professors: Daniel Durbin, Ph.D.; Colleen M. Keough, Ph.D.; Robert Scheer; Jonathan Taplin;

Rebecca Weintraub, Ph.D. (*Director, Communication Management Master's Program*)

Clinical Associate Professors: Ben Lee, Ph.D.; Susan Resnick West, Ph.D.; Christopher Smith, Ph.D.; Gordon Stables, Ph.D. (*Director, Trojan Debate Squad*); Alison Trope, Ph.D.

Clinical Assistant Professors: Daniela Baroffio, Ph.D.; Mathew Curtis, Ph.D.; Marcia Dawkins, Ph.D.; Brad Shipley, Ph.D.; Paolo Sigismondi, Ph.D.; Kimberlie Stephens, Ph.D.

Senior Lecturer: David Craig, M.A.

Lecturer: Dorine Lawrence-Hughes, J.D.

Research Professor: Jeffrey Cole, Ph.D. (*Director, Center for the Digital Future*)

Adjunct Faculty: Vincent Brook, Ph.D.; Anne Framroze; Michael Overing, J.D.; Paula Patnoe-Woodley, M.A.; Jillian Pierson, Ph.D.; Kelton Rhoads, Ph.D.; Michael Robinson, Ph.D.; Clinton Schaff; Justin Cody Simms

Emeritus Professor: Walter R. Fisher, Ph.D.

**Recipient of university-wide or school teaching award.*

Degree Programs

The School of Communication offers programs of study leading to a B.A. in Communication; minors in Sports Media Studies, Communication and the Entertainment Industry, Interactive Media and the Culture of New Technologies, Global Communication, Health Communication, Professional and Managerial Communication, Communication Law and Media Policy, Cultural Studies and Interdisciplinary Law and Society; a progressive degree in Master of Communication Management; an M.A. and Ph.D. in Communication; an M.A. in Global Communication (in conjunction with the London School of Economics); a Master of Communication Management and a Master of Public Diplomacy. The Master of Public Diplomacy combines the resources of the Annenberg School for Communication and Journalism and the USC Dornsife College of Letters, Arts and Sciences' School of International Relations. The Communication Management Program has established dual degree programs with the USC Gould School of Law and Hebrew Union College.

Undergraduate Degrees

The School of Communication offers programs of study leading to a B.A. degree and minors in Communication

and the Entertainment Industry, Interactive Media and the Culture of New Technologies, Global Communication, Health Communication, Professional and Managerial Communication, Sports Media Studies, and Communication Law and Media Policy. Many communication majors pursue, with the school's encouragement, a double major with another discipline or a minor to complement the major. Through careful planning, students can complete these options within four years.

Students must consult with an undergraduate academic adviser at least once each semester to explore course selections within the major, the minor, general education offerings and electives.

Admission

Admission is competitive. Fall 2012 incoming freshmen had an average GPA of 3.65 with an SAT score of 1885–2125 (middle 50%). Transfer students had an average college GPA of 3.68. For application instructions and deadlines, refer to the USC Admission Website. All transfer applicants must review the transfer admission application guidelines on the Annenberg Website. Contact the Annenberg Admissions Office for more information. USC exclusively uses the Common Application for freshman and transfer admission. Applicants must submit the Common Application and USC Supplement, both of which can be accessed at commonapp.org.

Students currently enrolled at USC who wish to change their major to communication must file a formal application with all supporting documents through the Annenberg Student Services Office. Students who entered USC as freshmen must have 32 units completed with a minimum GPA of 3.0. Students who entered USC as transfers must have 16 units completed at USC with a minimum GPA of 3.0. The 3.0 GPA is a minimum standard and does not guarantee admission.

Upon admission to the School of Journalism, students will lose transfer credits earned in journalism and public relations course work completed at another college or university.

For current USC students, the application period is the first week of classes each fall and spring semester. No applications will be accepted after the first week of classes.

Students who have not been admitted to the communication major or one of the minors may complete a maximum of 20 communication (COMM) units at USC. No further communication course work may be taken until the student is admitted. Students who complete the maximum number of units without gaining admission to the school will be advised to select another major. Students are encouraged to contact the Annenberg Student Services Office, ASC 140, (213) 740-0900, for advisement on change of major criteria and major requirements. In certain cases, students may be referred

to Dornsife College Advising, CAS 120, (213) 740-2534, to consult with an adviser to select another major.

Bachelor of Arts in Communication

General Education Requirements

The university's general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. This program requires six courses in different categories, plus writing, foreign language and diversity requirements, which together comprise the USC Core. See pages 63xx and 250xx for more information.

Course Requirements

REQUIRED COURSES		UNITS
Select 16 units from the following list:		
COMM 200	Communication and Social Science	4
COMM 201	Rhetoric and the Public Sphere	4
COMM 202	Communication and Technology	4
COMM 203	Communication and Mass Media	4
COMM 206	Communication and Culture	4
COMM 207	Economic Thinking for Communication and Journalism, and	2
COMM 208	Media Economics: Perspectives on Communication Industries	2
and two of the following three:		
COMM 204	Public Speaking	4
COMM 301L	Empirical Research in Communication	4
COMM 322	Argumentation and Advocacy	4
ELECTIVES		UNITS
Upper division COMM courses		16
Lower or upper division COMM or ASCJ courses		4
One 400-level non-cross-listed COMM course (excluding COMM 443, COMM 490, COMM 494, and COMM 499)		4

Students must maintain a minimum 2.0 overall GPA in upper division course work applied toward the major. Further, no more than 16 upper division elective units may be taken prior to completion of the entire core. No more than 4 units of COMM 380 may be counted toward the department major. The School of Communication is committed to ensuring that all declared communication majors follow the necessary requirements. Mandatory advisement is required of all communication majors each semester prior to registration. All students taking communication classes are held to the highest academic integrity standards and may be denied admission or have admission revoked as a result of conduct violations.

Qualified non-majors (generally, students with junior/senior status, a minimum 3.0 GPA and a declared major elsewhere at the university) with appropriate academic preparation may be permitted to enroll in communication electives without fulfilling prerequisite

requirements. Application for a waiver should be made to an undergraduate adviser.

Academic Integrity Policy

The School of Communication maintains a commitment to the highest standards of ethical conduct and academic excellence. Any student found responsible for plagiarism, fabrication, cheating on examinations, or purchasing papers or other assignments will be reported to the Office of Student Judicial Affairs and Community Standards and may be dismissed from the School of Communication. There are no exceptions to the school's policy.

Curriculum Areas of Study

By design, the courses in the curriculum tend to cluster into different areas of study. These areas represent important foci in the communication discipline and are areas in which the school's faculty possess special expertise. Four such areas of study are described below. They are not mutually exclusive, nor do they exhaust the curriculum; rather, they represent partially overlapping areas of unusual depth. Students may specialize in one of these areas or may design individual programs of study by choosing other combinations of electives that best meet their needs and career objectives. Relevant courses for the clusters are posted on the Annenberg School for Communication and Journalism Website (ascweb.usc.edu).

Media, Law and Politics Option: This option is designed for students who are interested in careers in government and public service, the law, and political and legal consulting, as well as advanced graduate study. Students examine communication processes in the public sphere and learn how to participate competently in these practices. Courses emphasize: the role of persuasion in the political and legal processes; the techniques used by individuals, institutions and social movements to influence public affairs; the history, design, implementation and evaluation of political campaigns; the role of public opinion; ethical issues in public communication, including the influence of media in the political and justice systems, the role of the First Amendment and the changing nature of freedom of expression in a mass-mediated environment, and problems of public participation.

Organizational and Interpersonal Communication

Option: This option is most relevant to students interested in careers in business, management, human resources and development, corporate communication, and consulting, as well as advanced graduate study. Courses emphasize: interpersonal communication processes that affect and reflect personality, motives, beliefs, attitudes and values; communication's role in the development, maintenance and disintegration of social, family and intimate relationships; managing interpersonal conflict; communication between superiors and subordinates and in teams; communication's role in determining organizational culture; managing information in organizations; and the role of information technology in processes of globalization.

Communication and Culture Option: This option will be attractive to a broad range of students whose careers have an international or multicultural dimension, from those interested in foreign service, travel and consulting to those seeking careers in the arts. In addition, students taking this option will be well prepared for advanced graduate study. Courses emphasize: communication as an essential component of culture and cultural production; cultural forces that shape communication practices; cultural barriers to communication; gender and diversity issues in human and mass communication and cultural production; media representations of race, ethnicity and gender; the production of meaning in diverse modes such as art, religion, popular culture and technology; and cultural criticism.

Entertainment, Communication and Society Option:

This option is for students who wish to pursue careers in the entertainment industry, as well as students interested in the relationship of communication and entertainment to popular culture, globalization, cultural studies, marketing, advertising and ethics. Students taking this option will be well prepared for graduate study; they will also be able to enter the entertainment industry with a grounding in the theory, roles, issues and effects of entertainment. Courses emphasize: the theoretical underpinnings of entertainment studies; the historical context of entertainment; the roles and effects of entertainment concepts in "high art" and popular culture; the impact of entertainment on politics; advertising in an entertainment society; the blurring of marketing and entertainment and the effects of this on culture; the effects of entertainment in general and specifically on constructions of race and childhood; issues in the blurring of fact and fiction; ethical dilemmas; and the globalization of entertainment industries.

Progressive Degree Program

This progressive degree program allows USC students to complete a bachelor's degree and a Master of Communication Management in as little as five years. Students with a 3.0 overall GPA or higher in all classes taken at the university level are eligible to apply for admission to the degree program during their junior year, however a 3.0 GPA does not guarantee acceptance.

Current students must attend a mandatory information session conducted by Annenberg Admissions before initiating the application process. Students admitted into the progressive degree program begin taking master's level courses in their senior year and may complete the master's degree in year five. For information on the application process, refer to the Annenberg Website, annenberg.usc.edu/currentstudents. Click on progressive degree. For further details on progressive degree programs, see page 86xx.

Minor in Sports Media Studies

In a university with a unique historical relationship to sports and sports media, this 24-unit minor examines the role of sports and sports media in culture, how the presentation of sports in media has evolved, has been shaped by cultural issues and, itself, impacted culture. The minor in sports media studies serves student interest in understanding sports media, how it functions, how to interact effectively with it, and how it has been

and may be used for social change. Requirements for admission are a minimum 3.0 GPA and completion of a minimum of 32 units (sophomore standing).

REQUIRED CORE COMMUNICATION COURSE UNITS

COMM 383	Sports, Communication and Culture	4
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ELECTIVES UNITS

Choose five classes from the following:

COMM 300	Foundations for the Study of Entertainment, Communication and Society	4
COMM 310	Media and Society	4
COMM 387	Sports and Social Change	4
COMM 363	Media Consumption	4
JOUR 380	Sports, Business and Media in Today's Society	4
JOUR 432	Sports Commentary	4
MOR 479	The Business of Sports	4
OT 333	Sports Ethics	4

Minor in Communication and the Entertainment Industry

This minor offers courses that examine the theory, social impact and economics of the music, film and television industries. Students will learn strategies for analyzing popular culture texts; management and public relations in the entertainment field; and social, cultural and political issues related to entertainment. USC provides a broad array of courses that equip students with tools to evaluate the marketing of entertainment and the cultural products of the film, television, theatre and music industries. This minor is intended to encourage students in a variety of majors to draw upon these properties in preparation for different careers in the entertainment industry.

Admission requirements are a minimum 3.0 grade point average and completion of 32 units (sophomore standing). The 3.0 GPA is a minimum standard and does not guarantee admission.

REQUIRED CORE COMMUNICATION COURSES (CHOOSE THREE OF FOUR) UNITS

COMM 300	Foundations for the Study of Entertainment, Communication and Society	4
COMM 310	Media and Society	4
COMM 384	Interpreting Popular Culture	4
COMM 395	Gender, Media and Communication	4

ELECTIVES UNITS

Choose 3–4 courses (12 units). One (4-unit) course must be in COMM; 8 units must be in an outside area.

COMM 306	The Communication Revolution, Entertainment and the Arts	4
COMM 339	Communication Technology and Culture	4
COMM 340	The Cultures of New Media	4
COMM 360	The Rhetoric of Los Angeles	4
COMM 395	Gender, Media and Communication	4
COMM 430	Global Entertainment	4
COMM 431	Global Strategy for the Communications Industry	4

COMM 432	American Media and Entertainment Industries	4
COMM 455	Advertising and Society	4
COMM 456	Entertainment, Marketing and Culture	4
COMM 457	Children and Media	4
COMM 458	Race and Ethnicity in Entertainment and the Arts	4
COMM 465	Gender in Media Industries and Products	4
COMM 480	Nonverbal Communication	4
COMM 498	Ethical Issues in Entertainment and Communication	4
CTCS 409	Censorship in Cinema	4
CTCS 464	Film and/or Television Genres	4
CTPR 386	Art and Industry of the Theatrical Film	4
CTPR 410	The Movie Business: From Story Concept to Exhibition	2
CTPR 460	Film Business Procedures and Distribution	2 or 4
CTPR 461	TV Station Management	2
JOUR 452	Public Relations in Entertainment	4
JOUR 459	Fact and Fiction: From Journalism to the Docudrama	4
JOUR 466	People of Color and the News Media	4
JOUR 467	Gender and the News Media	4
MUIN 360	Introduction to Music Law	4
MUIN 370	Distribution of Recorded Music and Music Publishing	4
MUIN 385	Radio in the Music Industry	4
THTR 487	Promotion for the Performing Arts	4

Total units: 24

Minor in Interactive Media and the Culture of New Technologies

The World Wide Web, electronic mail and many other interactive technologies are changing the way we learn, the way we work and the way we gather and exchange information in all areas of our lives. The 24-unit minor in interactive media and the culture of new technologies focuses on the wide-ranging social, cultural and economic ramifications of these new technologies and equips students with the basic technical skills necessary to excel in this age of the communication revolution.

Requirements for admission are a minimum 3.0 GPA and completion of a minimum of 32 units (sophomore standing). The 3.0 GPA is a minimum standard and does not guarantee admission.

REQUIRED CORE COMMUNICATION COURSES UNITS

COMM 202	Communication and Technology	4
COMM 339	Communication Technology and Culture	4
COMM 340	The Cultures of New Media	4

ELECTIVES — CHOOSE THREE

FROM THE FOLLOWING		UNITS
COMM 310	Media and Society	4
COMM 321	Communication in the Virtual Group	4

COMM 345	Social and Economic Implications of Communication Technologies	4
COMM 350	Video Games: Content, Industry, and Policy	4
COMM 384	Interpreting Popular Culture	4
COMM 395	Gender, Media and Communication	4
COMM 422	Legal Issues and New Media	4
COMM 431	Global Strategy for the Communication Industry	4
COMM 465	Gender in Media Industries and Products	4
COMM 486	Human and Technological Systems in Organizations	4
COMM 487	Communication and Global Organizations	4
CTIN 190	Introduction to Interactive Entertainment	4
CTIN 462	Critical Theory and Analysis of Games	4
CTIN 463	Anatomy of a Game	4
CTIN 488	Game Design Workshop	4

Total units: 24

Minor in Professional and Managerial Communication

The ability to succeed in today's workplace necessitates a growing number of communication skills. As today's increasingly global and highly competitive marketplace grows in complexity, the need to understand intercultural differences, the power of structure in the workplace and other issues such as dealing with interpersonal conflicts continues to increase. This 24-unit minor will provide students interested in the management of people, resources or products with these necessary tools. Requirements for admission are a minimum 3.0 GPA and completion of a minimum of 32 units (sophomore standing).

REQUIRED CORE COMMUNICATION COURSES UNITS

COMM 320	Small Group and Team Communication	4
COMM 375	Business and Professional Communication	4
COMM 385	Survey of Organizational Communication	4

ELECTIVES — CHOOSE THREE FROM

THE FOLLOWING: UNITS

COMM 302	Persuasion	4
COMM 304	Interpersonal Communication	4
COMM 308	Communication and Conflict	4
COMM 315	Health Communication	4
COMM 321	Communication in the Virtual Group	4
COMM 322	Argumentation and Advocacy	4
COMM 324	Intercultural Communication	4
COMM 345	Social and Economic Implications of Communication Technologies	4
COMM 388	Ethics in Human Communication	4
COMM 431	Global Strategy for the Communications Industry	4

COMM 486	Human and Technological Systems in Organizations	4
COMM 487	Communication and Global Organizations	4

Total units: 24

Minor in Communication Law and Media Policy

The rapid advance in information and communication technologies raises serious questions about the limits of free speech, censorship, and the impact of present and emerging communication policies on domestic and international industries. To address these developments, this 24-unit cross-departmental minor combines courses from communication, law, economics, political science and journalism. This minor not only enables students to understand what is occurring in the communication revolution, it also prepares them to participate in the movement as critics and advocates. Requirements for admission are a minimum 3.0 GPA and completion of a minimum of 32 units (sophomore standing).

REQUIRED CORE COMMUNICATION COURSES		UNITS
COMM 371	Censorship and the Law: From the Press to Cyberspace	4
COMM 322	Argumentation and Advocacy	4
COMM 421	Legal Communication	4

ELECTIVE COURSES		UNITS
Choose three from the following. One must be in COMM; two must be in an outside area.		
COMM 324	Intercultural Communication	4
COMM 345	Social and Economic Implications of Communication Technologies	4
COMM 370	The Rhetoric of Ideas: Ideology and Propaganda	4
COMM 388	Ethics in Human Communication	4
COMM 402	Public Communication Campaigns	4
COMM 412	Communication and Social Movements	4
COMM 422	Legal Issues and New Media	4
COMM 489	Campaign Communication	4
ECON 330	The Political Economy of Institutions	4
ECON 434	Economic Analysis of Law	4
JOUR 373	The Ethics of Television Journalism	4
JOUR 460	Social Responsibility of the News Media	4
LAW 200X	Law and Society	4
LAW 201X	Law and Politics: Electing a President	4
POSC 441	Cultural Diversity and the Law	4
POSC 442	The Politics of Human Differences: Diversity and Discrimination	4

Total units: 24

Minor in Global Communication

The rise of global firms and international changes that followed the end of the cold war raise new opportunities and challenges. This minor provides students from

fields such as business, journalism, engineering and political science an understanding of the dynamic nature of global relations, communications and technology. The global communication minor consists of six 4-unit courses, three from international relations and three from communication. Students are required to complete IR 305 Managing New Global Challenges; two additional IR upper division courses, at least one of which must be a course which focuses on a specific region; COMM 487 Communication and Global Organizations; and two elective courses relevant to global communication. See the School of International Relations, page 378xx, for complete course requirements.

Minor in Health Communication

This minor is designed to appeal to students with a wide range of interests, including those with a general interest in promoting healthy lifestyle practices through communication. These students will be prepared to seek future job opportunities from various areas including the managed care industry, hospitals, wellness programs, broadcast and cable companies, private and governmental agencies as well as other organizations looking for experts with demonstrated knowledge in health-related fields.

For degree requirements or to apply to this minor, contact the Department of Preventive Medicine, Keck School of Medicine, page 794xx.

Minor in Cultural Studies

See the Department of English, page 340xx.

Minor in Law and Society

See the Department of Political Science, page 439xx.

Minor in Photography and Social Change

See the Department of Sociology, page 471xx.

Debate Squad

The Trojan Debate Squad provides an opportunity for outstanding students (3.0 GPA or better), both communication majors and non-majors, to compete in an intensive intercollegiate laboratory setting. Whatever the student's intended career, the skills he or she develops in research, critical thinking and oral advocacy will be invaluable. The team has an excellent record in both team policy debate and individual speaking events and has traveled widely both nationally and abroad.

Honors Program

The School of Communication offers an 8-unit honors program for exceptional students. To qualify, students must have a 3.5 GPA both overall and in the COMM major after completing the core courses (16 units from COMM 200, COMM 201, COMM 202, COMM 203, COMM 206, COMM 207 and COMM 208 and two of COMM 204, COMM 301L and COMM 322). To graduate with School of Communication honors, a student must maintain a 3.5 overall and COMM major GPA and receive at least a B+ or higher in the two honors courses. Students either take COMM 495 Honors Seminar or work with a professor to customize a 400-level COMM course for honors status (4 units). All honor students complete COMM 497X Honors Thesis (4 units). Contact an undergraduate adviser for further information and application forms.

Honor Society

Lambda Pi Eta is a national communication/journalism honor society that is open to declared communication, journalism and public relations majors who have completed (or are currently registered for) at least 60 units, at least 12 of which are in the major. To be eligible, students must have a USC GPA and a major GPA of 3.5 or higher.

Honors in Multimedia Scholarship

This program offers qualified undergraduate students an opportunity to approach their discipline(s) of study through the critical application of multimedia expression and scholarship. The student experience will be characterized by smaller classes taught by leading faculty members and enriched by a program of lecture series, visiting scholars, symposia and conferences. For complete program requirements, see the School of Cinematic Arts, page 224xx.

Annenberg Career Development and International Programs

Semester in Amsterdam

Through the Council on International Education Exchange, students study at the University of Amsterdam. The first week students spend in orientation sessions which include an overview of the academic program, an introduction to Amsterdam and to Dutch society and culture, as well as excursions in and around the city. Students enroll in the offerings taught in English at the University of Amsterdam. Such courses include communication, art, history, economics, environmental sciences, computer science, history, philosophy, literature, social science and theology. Students may earn a maximum of 12 USC units of upper-division COMM elective credit.

Spring Semester in Australia

This semester program offers students the chance to study at one of Australia's premier universities, in one of the country's most exciting cities. Students take communication courses that count for major credit at USC at the University of New South Wales (UNSW) and can choose from a wide variety of elective courses. UNSW is located in Kensington, just south of the center of Sydney and its commercial hub. The program gives students the chance to explore mass media and communication in a challenging environment with a distinct world view, very different from that of the United States. Students may earn a maximum of 12 USC units of upper-division COMM elective credit.

Fall Semester in Buenos Aires

This semester program offers students the opportunity to study Latin American culture and study at the Universidad de San Andrés, a small liberal arts college in the suburbs of Buenos Aires. Students will live and learn in this vibrant metropolis while taking communication courses that count toward major credit at USC. Buenos Aires is one of the largest cities in Latin America and will give students the chance to explore the world view of Latin America and how it relates to communication, mass media and the world at large. The program will immerse students in South American culture. With

classes being taught exclusively in Spanish, this program requires a high degree of proficiency in Spanish, both written and oral (2.5 years of college-level Spanish or the equivalent required).

Semester in Hong Kong

The semester program offers students the opportunity to learn about Chinese culture at the Chinese University in Hong Kong, a bilingual institution. The program also gives students the experience of living in Hong Kong where they can witness the “one country, two systems” experiment. Courses in English are offered in fine arts, literature, history, Japanese studies, intercultural studies, music, philosophy, computer science, anthropology, economics, international relations, as well as journalism and communication. For students interested in Chinese language, courses are offered in Putonghua (Mandarin) or Cantonese. Extracurricular activities include the opportunity to teach English in rural China, monthly dinner talks with Asian studies specialists and excursions to local areas of interest. Students may earn a maximum of 12 USC units of upper-division COMM elective credit.

Summer in Ireland

This summer program offers Annenberg undergraduate students the chance to participate in a formal international internship program in Dublin for nine weeks during the summer. The aim of the program is to provide students with theoretical as well as practical experiences working, living and navigating within the international global communications environment. The program is designed around a summer-long online Annenberg course and a nine-week full-time unpaid internship in Dublin. Students will receive one unit of credit for JOUR 090X.

Semester in London

The semester program offers students the opportunity to study communication in London, the most important center of media in Europe. Many of the communication courses offered include British media guest lecturers and site visits. The program includes one-day visits to such places as Stonehenge, Stratford, Oxford, Cambridge and Windsor. Planned activities within London include theatre and museum visits and a reception with USC alumni residing in the London area. Students may earn 16 units of upper-division COMM elective credit.

Spring Semester in New Zealand

Annenberg's New Zealand program offers students the opportunity to travel to the Southern Hemisphere. Each spring, students can study at the Auckland University of Technology (AUT), a world-class institution which offers students the chance to take communication courses that count toward major credit at USC, all the while exploring the beautiful city of Auckland and the surrounding countryside. The AUT program offers communication students an exciting way to broaden their understanding of media and mass communication in a challenging environment with an outlook distinctly different from that of the United States and Southern California. Students may earn 12 units of upper-division COMM elective credit.

International Communication Studies — London, Paris, Prague and Istanbul

The International Communication Studies program (ICS) allows undergraduate students to study a range of approaches to public communication media across Europe.

Students divide the five-week course into stays in Los Angeles, London, Paris, Prague and Istanbul. In addition to regular class meetings, students discuss the interplay of current world issues and international media practices with communication practitioners from international news and public relations media, government institutions, private industry and global organizations.

Students enroll in JOUR 482 Comparative Media in Europe (4 units), which will count as 4 units of upper-division COMM elective credit.

International Communication Studies China — Beijing, Hong Kong and Shanghai

The International Communication Studies China program allows undergraduate students to study a range of approaches to public communication media in China. Students divide the four-week course into stays in Los Angeles, Beijing, Hong Kong and Shanghai. In addition to regular class meetings, students discuss the interplay of current world issues and international media practices with communication practitioners from international news and public relations media, government institutions, private industry and global organizations.

Students enroll in COMM 499 (4 units, for summer 2013), which will count as 4 units of upper-division COMM elective credit.

For further information, contact Annenberg Career Development and International Programs at (213) 821-2717, email ascintl@usc.edu or visit annenberg.usc.edu/international.

Graduate Degrees

Degree Programs

The School of Communication offers programs of study leading to a professional Master of Communication Management, an M.A./M.Sc. in Global Communication in collaboration with the London School of Economics, a Master of Public Diplomacy and research-oriented Master of Arts and Doctor of Philosophy degrees in Communication. The Master of Public Diplomacy combines the resources of the Annenberg School for Communication and Journalism and the USC Dornsife College of Letters, Arts and Sciences' School of International Relations. In addition, special programs enable students to earn dual degrees in communication management and law (USC Gould School of Law) and in communication management and Jewish nonprofit management (Hebrew Union College).

The degree programs are designed to ensure that students are educated in substantive studies that constitute the discipline of communication and provide a basis for competing effectively in the job market.

All students seeking the degrees in communication management and global communication will take a range of courses that prepare them for successful professional management careers in communication-related businesses, organizations and fields.

All students pursuing the research-oriented degree (Ph.D. in Communication) are required to take two

theory courses that introduce them to inquiry in human communication and two research methods courses that acquaint them with the historical/critical and social scientific techniques available to conduct scholarly research. These requirements strengthen the student's appreciation of the intellectual bases of human communication study and further the concept of a community of scholars and practitioners in the profession. Students specialize in one of five available tracks: rhetoric and political communication; media, culture and community; interpersonal and health communication; organizational communication; or information and society. In addition, students are encouraged to sample courses in the remaining tracks, thus obtaining an education of unparalleled breadth and depth.

Admission Requirements

Master of Communication Management, Master of Arts in Global Communication, Master of Public Diplomacy and Master of Public Diplomacy (Practitioner and Mid-Career Professional)

The school accepts students from a broad range of academic backgrounds in social sciences, humanities, physical sciences or professional schools. Some are employed or have work experience in communication-related fields. Others apply immediately after completing baccalaureate degrees.

Criteria: The faculty admission committees consider many criteria in the admission selection process: not only the academic record, but also professional and work-related accomplishments are taken into account. The minimum criteria are the equivalent of a U.S. bachelor's degree and a 3.0 GPA for all undergraduate and graduate work completed. The Master of Arts in Global Communication requires a minimum 3.5 (on a 4.0 scale) cumulative GPA or international equivalent for admission. For admission to communication management and public diplomacy, scores on the General Test of the Graduate Record Examinations (GRE) are required. Applicants to the communication management degree program may submit Graduate Management Admissions Test (GMAT) scores in lieu of the GRE. Scores on the Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) are required for applicants whose native language is not English. Letters of recommendations from those persons familiar with the applicant's work — preferably academically — are required also. In addition, applicants must submit a statement of purpose, transcripts of all previous college and university work attempted, résumé and writing samples.

Applicants to the global communication degree program must apply to USC and the London School of Economics (LSE). Participation in this degree program requires that students simultaneously gain admission to LSE and USC. GRE or GMAT scores are not required for admission. All students will begin their studies in London at the LSE.

Procedure: Admission is granted for fall for all graduate degree programs. In addition, communication management also offers admission for spring. Refer to the Annenberg Website for application guidelines, deadlines and filing periods.

Doctor of Philosophy

Students may enter from a variety of academic fields and majors. Applicants whose undergraduate work was in fields other than communication may be admitted on the condition that adequate preparation in directly relevant areas is evident. Completion of a master's degree in communication is not required for admission to the Doctor of Philosophy.

Criteria: All applicants must submit the online USC Graduate Admission Application and Annenberg Supplemental Form with three letters of recommendation from faculty qualified to comment on their capacities for a rigorous program of study. Completion of a basic descriptive statistics course is recommended. In addition, a personal statement, transcripts from all colleges/universities attended, a résumé and a sample of scholarly writing are required. The M.A. in Communication is earned as part of the Ph.D. program.

Procedure: Admission is granted for the fall semester only; the application deadline is December 1. Applicants are strongly encouraged to take the Graduate Record Examinations prior to November 1. Refer to the Annenberg Website for application guidelines.

Degree Requirements

The Global Communication, Master of Arts in Communication and Doctor of Philosophy in Communication are awarded under the jurisdiction of the Graduate School. Refer to the Graduate School section of this catalogue, page 97xx, and the Requirements for Graduation section, page 86xx, for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School.

Master of Communication Management

Each student chooses a track and follows the course of study for that track. A faculty academic adviser assists the student to build on earlier academic and work experience in order to achieve desired professional goals.

Residence

Students may pursue the Master of Communication Management on either a full- or part-time basis. Full time, the degree can be finished in five terms (four semesters plus one summer), or in as many as eight terms of continuous enrollment. With permission from a School of Communication committee, a maximum of 4 graduate units may be transferred from another accredited institution.

Foreign Language Requirement

There are no foreign language requirements for this degree.

Research Tool Requirement

Students take one 4-unit research course as a prerequisite for CMGT 597 Communication Research Practicum. The list of approved research methods courses is available from the faculty adviser and graduate studies director.

Course Requirements

Thirty-two units (usually eight courses) in approved graduate-level course work are required. Students will

take 4 units of a track core course. They will take 12 units from an elective list for their chosen track. They will take the research tool prior to the capstone Communication Research Practicum (CMGT 597). Of the remaining elective units, up to 8 may be taken at USC outside the School of Communication; these courses must be approved by the director of the Master of Communication Management program and may be selected from a variety of disciplines, depending upon student needs and career interests. All remaining course work must be chosen from Annenberg School offerings, either from the CMGT course list or from approved electives.

Graduate Certificate in Entertainment Communication Management

This certificate program is for students who have already earned master's degrees and who wish to pursue or expand careers in the entertainment industry. Students will study the latest areas of entertainment-related research, theory and application. They will have a strong grounding in the theory, roles, issues and effects of entertainment as well as the impact of entertainment and new entertainment technologies on society, behavior and the entertainment industry.

Students take 16 units of graduate course work that may not be used or have been used for any other degree or certificate program, of which 4 units may be cognate courses. A partial list of courses includes:

COMM 575	Advocacy and Social Change in Entertainment and the Media	4
CMGT 542	Business Strategies of Communication and Entertainment Firms	4
CMGT 543	Managing Communication in the Entertainment Industry	4
CMGT 547	Distribution of Recordings: Media, Retail and Online Channels	4
CMGT 548	Issues in Children's Media	4
CMGT 558	The International Entertainment Marketplace	4
CMGT 581	Media in Social Services: Design and Evaluation of Campaigns	4
CMGT 583	Social Marketing and Entertainment Education	4
CMGT 586	Entertainment Media: Content, Theory and Industry Practices	4

Graduate Certificate in Health Communication Management

This certificate program is for students holding master's degrees who wish to pursue or expand careers in health communication. Students will study the most recent theoretical and practical developments in the area of health communication and how this information can be used to improve public health as well as individual behavior.

Students take 16 units of graduate course work beyond the master's degree, of which 4 units may be cognate courses. One course must be from a preventive medicine, public health, pharmacology or other health science program that focuses on "what is communicated" in health communication. A partial list of courses includes:

COMM 575	Advocacy and Social Change in Entertainment and the Media	4
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CMGT 510	Communication, Values, Attitudes, and Behavior	4
CMGT 520	Social Roles of Communication Media	4
CMGT 541	Integrated Communication Strategies	4
CMGT 548	Issues in Children's Media	4
CMGT 581	Media in Social Services: Design and Evaluation of Campaigns	4
CMGT 583	Social Marketing and Entertainment Education	4
CMGT 599	Special Topics	2-4, max 8

Graduate Certificate in International and Global Communication Management

This certificate program is for students holding master's degrees who wish to pursue or expand careers in international and global communication management. Students will study the latest developments in information and communication technologies, regulations and policies, and industry practices within a global context.

Students take 16 units of graduate course work beyond the master's degree, of which 4 units may be cognate courses. A partial list of courses includes:

COMM 553	Political Economy of Global Telecommunications and Information	4
COMM 559	Globalization, Communication and Society	4
CMGT 531	Communication and the International Economy	4
CMGT 557	Communication Policy in the Global Marketplace	4
CMGT 545	Communication and Global Competition	4
CMGT 558	The International Entertainment Marketplace	4
CMGT 582	Communication for International Development	4
CMGT 583	Social Marketing and Entertainment Education	4

Graduate Certificate in Marketing Communication Management

This certificate program is for students holding master's degrees who wish to pursue or expand careers in marketing communication. Students will study the latest developments in marketing communication research and theory and the application to marketing communication issues.

Students take 16 units of graduate course work beyond the master's degree, of which 4 units may be cognate courses. A partial list of courses includes:

CMGT 502	Strategic Corporate Communication	4
CMGT 510	Communication, Values, Attitudes, and Behaviors	4
CMGT 541	Integrated Communication Strategies	4
CMGT 548	Issues in Children's Media	4
CMGT 581	Media in Social Service: Design and Evaluation of Campaigns	4
CMGT 584	Communication and the Multicultural Marketplace	4
CMGT 587	Audience Analysis	4
CMGT 599	Special Topics	2-4, max 8

Graduate Certificate in New Communication Technologies

This certificate program is for students holding master's degrees who wish to pursue or expand careers in communication technologies. Students will study the latest developments in new communication and media technologies and their application in a variety of organizational and social contexts.

Students take 16 units of graduate course work beyond the master's degree, of which 4 units may be cognate courses. A partial list of courses includes:

COMM 534	The Culture of New Technologies	4
COMM 544	The Arts and New Media	4
CMGT 528	Web Design for Organizations	4
CMGT 530	Social Dynamics of Communication Technologies	4
CMGT 533	Emerging Communication Technologies	4
CMGT 535	Online Communities for Organizations	4
CMGT 547	Distribution of Recordings: Media, Retail and Online Channels	4
CMGT 566	Communication Law and New Technologies	4
CMGT 571	Communications Technologies	4
CMGT 574	Tele-Media: A Strategic and Critical Analysis	4
CMGT 599	Special Topics	2-4, max 8

Graduate Certificate in Strategic Corporate and Organizational Communication Management

This certificate program is for students holding master's degrees who wish to pursue or expand careers in corporate communication and communication consulting. Students will study the latest developments in organizational communication research and theory and the application to business communication issues.

Students take 16 units of graduate course work beyond the master's degree, of which 4 units may be cognate courses. A partial list of courses includes:

CMGT 500	Managing Communication	4
CMGT 502	Strategic Corporate Communication	4
CMGT 505	Communication in Work Settings	4
CMGT 510	Communication, Values, Attitudes, and Behavior	4
CMGT 535	Online Communities for Organizations	4
CMGT 573	Evaluating Communication Needs	4
CMGT 576	Communication Strategies for Conflict Management	4
CMGT 599	Special Topics	2-4, max 8

Master of Arts in Global Communication

The Annenberg School for Communication and Journalism collaborates with the London School of Economics and Political Science (LSE) to provide the course work necessary for students to become fully engaged with the phenomenon of global communication through this dual master's degree program. Upon satisfaction of all program requirements, students will be awarded a Master of Arts (M.A.) in Global Communication by USC as

well as a Master of Science (M.Sc.) in Global Media and Communications by the LSE.

Residence

This is a two-year program during which students spend their first year at the LSE and their second year at USC.

Foreign Language/Research Tool Requirements

There are no foreign language requirements. Students take a one-term research methods course as part of their course work at the LSE.

Course Requirements

The Master of Arts in Global Communication requires 42 units; the equivalent of 18 units earned at the LSE and 24 units earned at USC.

Year at LSE: The LSE academic year has three terms. Students will complete classes approved by faculty at the LSE. Students must earn at least 3 units at the LSE, which articulates as 18 units at USC.

Year at USC: Students must complete COMM 598 as well as 20 elective units (5 courses) from the School of Communication graduate curriculum, excluding COMM 525, COMM 526, COMM 550 and COMM 552.

Students may choose one of their elective courses from a department outside Annenberg with the approval of their advisers.

Students will produce a final research project on global communication that will be the product of work done both at the LSE and Annenberg. Students complete a research project during the summer after their year at the LSE for which grades are awarded by LSE faculty. A passing grade is required. They will continue to develop this project during the year at Annenberg in COMM 598 and must earn a grade of B minus or higher.

Master of Arts in Communication

Individuals seeking the Master of Arts in Communication are expected to acquire and demonstrate a general knowledge of human communication, including humanistic and social scientific approaches.

The program, arranged in consultation with the school's coordinator of doctoral studies, provides two options: degree with comprehensive examination requires a total of 32 units (normally eight courses), including core courses COMM 525, COMM 526, COMM 550 and COMM 552 and four electives; or degree with thesis requires successful completion of core courses, three electives and 4 units of COMM 594ab Master's Thesis.

Not more than two approved 400-level courses may be applied to a student's program and a maximum of 4 semester units with grades of B or better may be accepted by transfer from another institution of higher learning. The minimum acceptable GPA for successful completion of this program is 3.0.

The majority of students choose the comprehensive examination option. The examination consists of six hours of writing, taken on two different days. Permission to take an M.A. degree with thesis can be obtained only by application to the school screening committee.

Master of Public Diplomacy

The Master of Public Diplomacy combines the resources of the Annenberg School for Communication

and Journalism and the USC Dornsife College of Letters, Arts and Sciences' School of International Relations. This program is designed for students who already have a substantial undergraduate background in social sciences or relevant professional experience in subjects such as communications, film and media studies, journalism, political science, public relations and international relations. Students in the program may decide to emphasize public diplomacy training most appropriate for a career in public service, the corporate world or in a nongovernmental organization (NGO) working in the ever-expanding global civil society. USC is a member of the Association of Professional Schools of International Affairs (APSIA).

Requirements for the completion of this degree program are 49 units, including the required substantive paper or alternative project. The course requirements are as follows:

PUBLIC DIPLOMACY REQUIREMENTS (12 UNITS)		UNITS
PUBD 502	Historical and Comparative Approaches to Public Diplomacy	4
PUBD 504	Global Issues and Public Diplomacy	4
PUBD 596	Practicum in Public Diplomacy Research	4

PUBLIC DIPLOMACY TOOLBOX COURSES

(12 UNITS)	UNITS
Any three approved PUBD courses	

INTERNSHIP (1 UNIT)		UNITS
IR 591	Field Study	1

COMMUNICATION AND INTERNATIONAL RELATIONS ELECTIVES (16 UNITS)

RELATIONS ELECTIVES (16 UNITS)	UNITS
Any two approved IR courses	8
Any two approved COMM or CMGT courses	8

OTHER ELECTIVES

(COGNATE, COMM, CMGT, IR) (8 UNITS)	UNITS
These units may be taken from the School of Communication, School of International Relations or any graduate program at USC. Courses must be approved by the Public Diplomacy program director.	

Master of Public Diplomacy (Practitioner and Mid-Career Professional)

This program is designed for students who already have at least five years experience working in public diplomacy (engaged in international advocacy, international publicity/public relations, international broadcasting, cultural and/or exchange work or other work which the admissions committee deems to fall within their definition of public diplomacy). The program is taught over a single calendar year beginning with a summer course introducing the advanced study of public diplomacy and ending with the submission of a piece of research work in the middle of the following summer. Refer to the application guidelines on the Annenberg Prospective Student Web pages.

Requirements for the completion of this degree program are 32 units including a substantive paper or alternative project. Core courses are taught in the School of Communication and the School of International

Relations, USC Dornsife College of Letters, Arts and Sciences. With approval of the program director, students may select electives from the entire USC graduate curriculum.

PUBLIC DIPLOMACY CORE REQUIREMENTS

(8 UNITS)	UNITS
PUBD 500 Introduction to the Advanced Study of Public Diplomacy	4
PUBD 596 Practicum in Public Diplomacy Research	4

PUBLIC DIPLOMACY TOOLBOX COURSES

(8 UNITS)	UNITS
Select two approved PUBD courses	

ELECTIVES (8 UNITS FROM COMMUNICATION OR INTERNATIONAL RELATIONS)

UNITS
Approved IR courses
Approved COMM or CMGT courses

OTHER ELECTIVES

(COGNATE, COMM, CMGT, IR) (8 UNITS)	UNITS
These units may be taken from the School of Communication, School of International Relations or any graduate program at USC.	

Doctor of Philosophy in Communication

Students in the doctoral program learn theories that guide research into communication processes and effects and into institutions and technologies that lend pattern to communication. Applicants for the Ph.D. are expected to acquire and demonstrate humanistic and behavioral knowledge of communication while acquiring skills requisite to scholarly research in the discipline.

Screening Procedures

Student progress is carefully monitored by the School of Communication faculty. Students are normally screened at the end of their first year of graduate study. At that time they must have completed no fewer than 16 and no more than 24 units, including COMM 525, COMM 526, COMM 550 and COMM 552. Students are evaluated on subject matter competence, teaching potential and their ability to conduct independent research. Upon successful passage of the screening procedure, the student has 30 days in which to form a qualifying exam committee.

Course Requirements

The student is required to take a minimum of 76 units and write an approved dissertation. Four core courses — COMM 525, COMM 526, COMM 550 and COMM 552 — and COMM 794ab Doctoral Dissertation are required for all students.

Students specialize in one of five tracks by completing a minimum of three courses (12 units) in one of the following:

(1) Rhetoric and Political Communication: COMM 509, COMM 511, COMM 512, COMM 513, COMM 514, COMM 515, COMM 517, COMM 518, COMM 521, COMM 522, COMM 580, COMM 599, COMM 610;

(2) Media, Culture and Community: CMGT 587, COMM 516, COMM 519, COMM 534, COMM 544, COMM 575, COMM 580, COMM 584, COMM 599, COMM 605,

COMM 618, COMM 620, COMM 629, COMM 653, COMM 654, COMM 660, COMM 662;

(3) Interpersonal and Health Communication: CMGT 587, COMM 504, COMM 524, COMM 562, COMM 599, COMM 602, COMM 615, COMM 620, COMM 625, COMM 650;

(4) Organizational Communication: COMM 508, COMM 524, COMM 585, COMM 599, COMM 620, COMM 635, COMM 636, COMM 637, COMM 638, COMM 640, COMM 641, COMM 645, COMM 648, COMM 652;

(5) Information and Society: COMM 546, COMM 553, COMM 570, COMM 582, COMM 599, COMM 605, COMM 620, COMM 630, COMM 631, COMM 635, COMM 645, COMM 647, COMM 660, COMM 662.

In addition, students must take at least two courses in one other track outside their specialization (8 units total). Students also pursue an approved cognate elective program of study in which at least two courses (normally 8 units) are taken in a related field outside the Annenberg School. Students entering the School of Communication with a master's degree may, with permission, apply part of their previous graduate course work to the cognate requirement. Students in the organizational communication track are required to take at least two methods classes in addition to the core courses, COMM 550 and COMM 552. If taken in a department or unit other than the School of Communication, these courses cannot also be counted toward the student's cognate requirement.

Research Tool Requirement

Doctoral students are expected to demonstrate methodological competence in an area of specialization prior to taking the qualifying examination. Such competence is usually demonstrated through course work (the successful completion, with grade B or better, of selected course work in addition to their content courses that is approved by the Ph.D. qualifying exam committee taken in the school and/or related departments), and by completion of a preliminary research project. Under special circumstances, students with an exceptional prior background in research methods may demonstrate their competence by successfully passing a research tool examination designed and administered by the Ph.D. qualifying exam committee.

Qualifying Exam Committee

This committee is composed of five USC faculty members, at least three of whom are from the School of Communication. Students are expected to work closely with the members of their qualifying exam committee, especially their committee chair, in selecting advanced course work and shaping areas of interest and research. In addition to helping the student plan a program, the committee administers the oral portion of the qualifying examination and approves the dissertation committee.

Qualifying Examination

Qualifying examinations for the Ph.D. usually are taken in the third year of study following completion of all required courses and a preliminary research paper. The examination includes both written and oral portions. The written portion is composed by committees of faculty in the relevant areas of study; the oral portion is administered by the student's qualifying exam committee.

Students must pass both portions to be advanced to candidacy. Students must confer with their qualifying exam committee chair, not later than the second week of the semester during which the examinations are to be taken, regarding distribution of written examination hours among subject matter areas.

Doctoral Dissertation

The dissertation is an original research project contributing to knowledge about human communication and should demonstrate a high level of competence in methodologies of scholarly inquiry.

Defense of Dissertation

Dissertations are defended in a formal meeting with the three-member dissertation committee. The school prefers that the defense oral be taken prior to final typing so that recommended changes can be made in the final manuscript.

Dual Degree in Law (J.D.) and Master of Communication Management

Academic training in law and in communication management provides a powerful background for careers in business, entertainment or government life. The USC Gould School of Law and the School of Communication collaborate in a program that enables these educational opportunities. Students complete both the J.D. and the Master of Communication Management in three years, the time normally required for the law degree alone.

Students must complete 20 units (five courses) of communication courses at the School of Communication: one core class from the student's preferred track; one method course; CMGT 597; and the remaining two courses may be from either core or elective offerings.

To earn the J.D., all students (including dual degree students) must complete 35 numerically graded law units at USC after the first year. The associate dean of the USC Gould School of Law may make exceptions to this rule for students enrolled in law school honors programs.

First Year: Required law school courses.

Second and Third Years: 20 units of communication courses; 38 units of law courses, of which 8 units must be approved as appropriate for acceptance by the School of Communication toward its degree.

All students take CMGT 597 in the third year.

Application to pursue the dual degree should be made before completion of 15 units of work in law or 8 units toward the Master of Communication Management degree. Admission by the law school to its J.D. degree will be evaluated as a substitute for GRE scores.

Dual Degree in Master of Communication Management/Jewish Nonprofit Management

The dual degree program, Communication Management/Jewish Nonprofit Management, offers students the opportunity for advanced study of sophisticated communication processes and technologies in the context of the nonprofit arena. The program has been developed by the Annenberg School for Communication and Journalism and Hebrew Union College-Jewish Institute of Religion's School of Jewish Nonprofit Management (formerly the HUC-JIR School of Jewish

Communal Service) to combine the study of communication theory, processes and technologies with post-graduate education in Jewish nonprofit management and leadership. The goal of this program is for graduates to perform more effectively in the nonprofit sector, having received specific training in areas such as organizational communication, media impacts and policy.

Students of this program are admitted separately to each school. Four of the 52 required credits of graduate course work at Hebrew Union College are used to fulfill the School of Communication's cognate option. In addition, the student will complete 24 credits of the school's course work including CMGT 597, as well as the School of Jewish Nonprofit Management's thesis requirements.

Those interested in this program should contact the Office of Admissions, Hebrew Union College-Jewish Institute of Religion, 3077 University Avenue, Los Angeles, CA 90007-3796 for comprehensive information about the application process.

Courses of Instruction

ANNENBERG SCHOOL FOR COMMUNICATION AND JOURNALISM (ASCJ)

ASCJ 100 The Changing World of Communication and Journalism (2, Fa) Survey of major themes in media and communication; exploring what it means to be a professional in the fields of communication, journalism, and public relations.

COMMUNICATION (COMM)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

COMM 140x Nature and Impact of Communications (4) Nature of communications and their impact upon people; examination of empirical evidence showing impact of media and the organization of media institutions. Not available for major credit.

COMM 141 Applied Debate (4) Fundamentals of debate and critical thinking; participate in classroom and public on-campus audience debates; engage in experiential learning in community settings.

COMM 200 Communication and Social Science (4, FaSp) Social scientific inquiry into human communication; core theories of message production and reception in interpersonal, group and organizational contexts.

COMM 201 Rhetoric and the Public Sphere (4) Humanistic approaches to inquiry in communication; qualitative research techniques; core theories of message production and reception in social, political, cultural and mediated contexts.

COMM 202 Communication and Technology (4) Survey of cultural, social, political, and economic impacts of new communication technologies, including written language, the printing press, the telephone, television, and cyberspace.

COMM 203 Communication and Mass Media (4) Survey of mass communication research; history, content, effects, theories and policy implications of various media.

COMM 204 Public Speaking (4) Principles and practices of effective oral communication; analysis of the speaking-listening process; selection and organization of speech materials; use of new presentation technologies.

COMM 205x Communication Practicum (1, 2, max 4) Students address communication issues in a field setting. They will evaluate communication practices using appropriate methodology. Projects are jointly evaluated by internship supervisor and professor. Sophomore standing. Graded CR/NC.

COMM 206 Communication and Culture (4) Examines cultural institutions, ideologies, artifacts, and productions; role of culture in everyday life; cultural studies as methodology; culture and power.

COMM 207 Economic Thinking for Communication and Journalism (2) Introduction to microeconomic and macroeconomic principles; analysis of contemporary issues in media, communication and journalism industries from an economic perspective.

COMM 208 Media Economics: Perspectives on Communication Industries (2) Application of economic principles in the areas of media ownership, market structure, industry regulations, media convergence, and entrepreneurship in new media. *Prerequisite:* COMM 207.

COMM 300 Foundations for the Study of Entertainment, Communication and Society (4) Theoretical foundation for understanding the construction, consumption, and consequences of entertainment from classical to contemporary times; situates entertainment within the ecology of information and communication. *Recommended preparation:* COMM 200, COMM 201.

COMM 301L Empirical Research in Communication (4) Experimental and survey methods for communication study; basic statistical concepts, procedures, and tests. *Prerequisite:* COMM 200.

COMM 302 Persuasion (4) Theories and research in social influence; strategies and tactics of persuasive communications in such settings as politics, public relations, advertising, business.

COMM 303 Learning from Case Studies in Communication (4) Case study approaches to communication research; reliability, validity, generalizability, and ethics in qualitative social research; cases in communication policy and practices.

COMM 304 Interpersonal Communication (4) Analysis of face-to-face interaction; role of communication in the development, maintenance and destruction of relationships; communication processes in managing interpersonal conflict.

COMM 305 Understanding Social Science Research (4) Students learn to be consumers rather than creators of social science research. Examines the challenges and opportunities of communicating research through mass media.

COMM 306 The Communication Revolution, Entertainment and the Arts (4) Explorations of the effect of digital technology on the entertainment business. Relationships among technology, economy, popular culture, entertainment and art.

COMM 307 Sound Clash: Popular Music and American Culture (4) Music as inter-cultural communication and method for exploring race and ethnicity in the constitution of American culture and American self; role of music industry.

COMM 308 Communication and Conflict (4) Nature and functions of communication in human conflict; development of communication skills for managing conflict productively in interpersonal, organizational and intercultural contexts.

COMM 310 Media and Society (4) Interplay between media and society, including family and children's socialization, inter-group relations and community, pornography and violence, gender and race, media ethics, conduct of politics.

COMM 315 Health Communication (4) Behavioral approaches to health communication; communication competencies in health care settings, theories of risky behaviors, and behavioral change programs; special emphasis on AIDS-related issues. *Recommended preparation:* COMM 301L.

COMM 320 Small Group and Team Communication (4) Group process theories relevant to communicative behavior in small group/team settings, including information exchange, decision making, leadership, and meetings; student team projects testing theoretic propositions.

COMM 321 Communication in the Virtual Group (4) Communication processes in global computer networks; formation, maintenance, and decline of virtual groups; privacy and access; introduction to computer networks for communication students and researchers.

COMM 322 Argumentation and Advocacy (4) Basic argumentation theory including analysis, research and evidence, case construction, refutation; discursive and visual argument; diverse fields of advocacy including law, politics, organizations, interpersonal relations.

COMM 323 Public Deliberation (4) Introduction to deliberative democracy in culture and governance; examines historical and contemporary institutions of democratic discourse and emerging communication norms.

COMM 324m Intercultural Communication (4) Cultural variables and social psychological processes that influence intercultural interaction; relationship between communication and culture in diverse settings including business, medicine, and education.

COMM 325 Intercultural Britain: Media, History and Identity (4) Examines urgent social and political issues as they are shaped, represented and expressed by the institutions of media, culture and communication within the United Kingdom.

COMM 330 Rhetoric in Classical Culture (4) Theories of communication and persuasion in ancient Greece and Rome; cultural and social contexts of classical rhetorical theory; major historical figures and concepts. *Recommended preparation:* COMM 201.

COMM 335 Rhetoric in Contemporary Culture (4) Theories of communication and persuasion in contemporary society; cultural and social contexts of contemporary rhetorical theory; major theorists, concepts and controversies. *Recommended preparation:* COMM 201.

COMM 339 Communication Technology and Culture (4) Examination of philosophies and popular representations of technology from the origins of western culture to the present and identifies the complex attitudes toward technology.

COMM 340 The Cultures of New Media (4) Cultural implications of computer-mediated communication and related media. Ideological responses to media innovation; debates over artificial intelligence, virtual communities, and virtual reality. *Recommended preparation:* COMM 339.

COMM 345 Social and Economic Implications of Communication Technologies (4) Social and economic impacts of information and communication technologies; social factors that shape technological change; issues include access, privacy, freedom of expression, productivity, democratic control.

COMM 350 Video Games: Content, Industry, and Policy (4) Introduction to the medium; history of video games; video games as aesthetic products, cultural products, economic outputs; policy issues, effects, and sites of community.

COMM 355 Advertising and Communication (4) Advertising as a mode of communication; U.S. advertising history and institutions; economic and policy contexts (domestic and global); critical analysis of advertising texts.

COMM 360 The Rhetoric of Los Angeles (4) Representations of Los Angeles communicated in diverse media; the city as a rhetorical text; analysis of cultural identities, art, architecture, and representations in popular culture.

COMM 363 Media Consumption (4) Theoretical approaches to the study of media consumption and audiences; examines international media and consumption practices; explores new media's impact on consumption.

COMM 364 Comparative Media: United States and the United Kingdom (4) Cross-national approaches to the study of U.S. and U.K. media; focuses on news and entertainment media products; examines content, industries, technologies and audiences.

COMM 365 The Rhetoric of London (4, FaSpSm) Examination of the modern city as a communicative text with London as the case study.

COMM 366 Designing Media and Communication Projects for Social Change (4) Students explore the theoretical and practical issues involved in designing effective media and communication projects for social change in international contexts.

COMM 370 The Rhetoric of Ideas: Ideology and Propaganda (4) Techniques of propaganda in public discourse; communication strategies through which ideas become ideologies; case studies in wartime and corporate propaganda, imperialism, and cultural colonialism.

COMM 371 Censorship and the Law: From the Press to Cyberspace (4) The study of current and historical battles over the limits of free expression from press and public parks to television, movies, music and cyberspace. (Duplicates credit in former JOUR 371.)

COMM 372 The Image of the Journalist in Popular Culture (4) (Enroll in JOUR 375)

COMM 375 Business and Professional Communication (4) Oral and written communication skills demanded in the workplace including informative and persuasive speeches; interviewing; team communication; and training material preparation. *Recommended preparation:* COMM 204.

COMM 380 Forensics Laboratory (1-4, max 8) Directed individual research studies of contemporary problems. Supervised laboratory experience. Open only to members of the University debate squad.

COMM 382 Sports, Business and Media in Today's Society (4) (Enroll in JOUR 380)

COMM 383m Sports, Communication and Culture (4) Rhetorical and critical approaches to sports and public discourse; application to sports organizations, the news and popular media; representations of gender and race in sports.

COMM 384 Interpreting Popular Culture (4) Popular culture as an indicator of cultural values, a producer and reflection of cultural meaning, and a means of communication; theory and case studies.

COMM 385 Survey of Organizational Communication (4) The role of information, persuasion, and meanings in organizations. Topics include organizational culture, leadership, decision-making, networks, power, diversity and the global workplace.

COMM 387 Sports and Social Change (4) Application of critical, sociological and rhetorical theories to sports events and sport media; examination of the role of sports in enacting social change.

COMM 388 Ethics in Human Communication (4) Value perspectives on communication in varied settings: interpersonal, organizational, and public. Issues of truth and responsibility in family and social interactions, advertising, and governmental communication.

COMM 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

COMM 395m Gender, Media and Communication (4) Issues of gender in communication, including: media representations of femininity and masculinity; and gender's role in communication at the interpersonal, public, and cultural levels.

COMM 396 Fashion, Media and Culture (4) Fashion as a form of communication and culture; fashion's role in identity, body politics, art, nationhood, celebrity and Hollywood culture, youth cultures and subversive practices.

COMM 400 Seminar in Communication (4, max 12) Advanced readings in communication theory and research (broadly defined); specialized interest areas of individual faculty on the frontiers of knowledge; seminar topics change each semester.

COMM 401 Audience Analysis (4) Examines audience analysis methodologies including focus groups, shadow juries, surveys, test marketing and content analysis; application of statistical sampling procedures, data analysis, interpretation and presentation. *Prerequisite:* COMM 301L.

COMM 402 Public Communication Campaigns (4) Theory and research in public health communication campaigns; design, implementation, and evaluation; extensive discussion of historical case studies and reasons for success or failure.

COMM 411 Communication Criticism (4) Methods and functions of criticism in forms of public communication; historical-contextual, textual, and interpretive procedures; diverse theoretical approaches including formalism, dramatism, genre, and ideology. *Prerequisite:* COMM 201.

COMM 412 Communication and Social Movements (4) Social and political movements as rhetorical phenomena; ideology, organization, and influence of such movements as civil rights, "New Left," feminism, "New Right," environmentalism.

COMM 413 Propaganda, Ideology and Public Controversy (4) Seminar examining the relationship between propaganda, ideology, critical thinking and rhetoric; application to contemporary controversies, both domestic and global; role of public argument. (Duplicates credit in COMM 370.)

COMM 414 Communication and Social Change in China (4) Examines social, political, and cultural implications of media and communication on Chinese society; regulations relevant to Chinese communication; market reforms, telecommunication, internet and creative industries.

COMM 421 Legal Communication (4) Analytical and communicative aspects of judicial argument; philosophy and techniques of jury trials, cross examination, and appellate advocacy; research, preparation, and presentation of case briefs. *Prerequisite:* COMM 322.

COMM 422 Legal Issues and New Media (4) Examines laws and regulatory policies shaping new media, especially the Internet; impact of regulation on development and use of communication technology.

COMM 424 Millennium in the Media (4) The new millennium in history, religion and mass media. Utopian and apocalyptic conceptions of the future from oral culture to printing, film, broadcasting, and Internet. *Recommended preparation:* COMM 200, COMM 201.

COMM 425 Communicating Religion (4) Genres of religious communication, including sermon, prayer, ritual, polemic, and revival. Impact of technological and cultural change on religious advocacy, beliefs, and practices.

COMM 426 Religion, Media and Hollywood: Faith in TV (4) How religion, ethics and spirituality are embedded, embodied and emplotted in television drama; how secular texts represent "lived religion" to increasingly diverse audiences.

COMM 430 Global Entertainment (4) Survey of economic, political, and cultural dimensions of the global entertainment marketplace; focuses on the international production and distribution of media products and services. *Prerequisite:* COMM 300.

COMM 431 Global Strategy for the Communications Industry (4) Addresses the practical and theoretical aspects of the international economy that are most relevant to management strategy in the communications industry.

COMM 432 American Media and Entertainment Industries (4) Examines the history, technology, regulations and business practices of American broadcast and entertainment industries.

COMM 433 Home Entertainment (4) History and impact of television and ancillary home entertainment (pay television, cable television, home video, DVD, DVR, video-on-demand, etc.) on media industries and consumer experience.

COMM 440 Music as Communication (4) Examines music's unique characteristics as a communicative form and the cultural, economic, political and social influences in music interpretation and production.

COMM 443 Communicating Health Messages and Medical Issues (4) How communication — interpersonal, mass media, and information technologies — shapes health behavior. Topics: doctor-patient consults; public campaigns; health issues in entertainment, news, and on the Internet.

COMM 450 Visual Culture and Communication (4) Examines issues of visual images in communication related to history, modernity, cityscapes, news media, advertising, evidence, science, digital technology, and globalization. *Recommended preparation:* AHIS 100, COMM 201, FA 150.

COMM 451 Visual Communication and Social Change (4) Analysis of photography's evolution; new strategies for the photographic image, photo documentary work and global social issues; analysis of images on blogs and Websites.

COMM 454 Media, Money, and Society (4) Money as communication; social scientific analysis of money and financial markets; money and popular culture; the business press; representations of Wall Street in Hollywood cinema.

COMM 455 Advertising and Society (4) Examination of the role of advertising in contemporary society as an economic force and a cultural form of representation. *Recommended preparation:* COMM 200, COMM 201.

COMM 456 Entertainment, Marketing and Culture (4) Explores blurring of entertainment, marketing and culture in advanced information economies; intersections of culture and media and their social ramifications. *Prerequisite:* COMM 300; *recommended preparation:* COMM 200, COMM 201.

COMM 457 Children and Media (4) Explores construction of "childhood" in media and popular culture, including television, movies, video games, toys, magazines, and music. Examines children as a unique audience. *Prerequisite:* COMM 300; *recommended preparation:* COMM 200, COMM 201.

COMM 458m Race and Ethnicity in Entertainment and the Arts (4) Examines how race and ethnicity as social categories are shaped by communication media; focuses on how race and ethnicity sustain entertainment and media industries. *Prerequisite:* COMM 300; *recommended preparation:* COMM 200, COMM 201.

COMM 459 Fact and Fiction: From Journalism to the Docudrama (4) (Enroll in JOUR 459)

COMM 460 Collaboration and Group Decision Making (4) Advanced seminar examining the theoretical, empirical and practical aspects of human and technological communication in group processes; experiential and/or field experiences in group observation.

COMM 465m Gender in Media Industries and Products (4) Examination of the effect of gender stratification in media industries upon the cultural products they create, especially gender and gender/race role portrayals.

COMM 466m People of Color and the News Media (4) (Enroll in JOUR 466m)

COMM 467 Gender and the News Media (4) (Enroll in JOUR 467)

COMM 468 Cross-Cultural Negotiations: Communication and Strategy (4) Application of intercultural communication theories and negotiation theories in the preparation and execution of global negotiations; strategies for creating mutual gains and sustained partnerships.

COMM 470 Information and Communication Technologies Strategic Analysis (4) Frameworks for strategically analyzing information and communication technologies; issues of regulation, control and social impacts of evolving ICTs; original research project of ICT strategy. (Duplicates credit in COMM 345.)

COMM 473 Advanced Issues in Communication and Technology (4) Advanced level readings into human-computer interfaces; social interaction with artifacts; concept of presence, and emerging social and psychological issues of new communication and computer technologies. *Prerequisite:* 301L.

COMM 475 Environmental Communication (4) Communication about environmental controversies in the public sphere: history of environmentalism; forms of citizen participation; media coverage; advocacy campaigns and movements; scientific and industrial discourses.

COMM 480 Nonverbal Communication (4) Theory and research; examination of the influence of environmental factors, physical behavior, and vocal cues on human communication.

COMM 482 Comparative Media in Europe (4) (Enroll in JOUR 482)

COMM 486 Human and Technological Systems in Organizations (4) How communication and information technologies are linked to organizational control, design, cultures; technology and competitive advantage; ethics and policy issues; technology-mediated work. *Recommended preparation:* COMM 385.

COMM 487 Communication and Global Organizations (4) The role of communication in global organizations; information, networks, and communication technologies for global organizing; computer-based collaborative work and virtual organizations. *Recommended preparation:* COMM 385.

COMM 488 Communication Research in Organizations (4) Seminar in application of communication research tools; diagnosis and analysis of communication problems; current topics in organizational communication scholarship; students complete original research projects. *Recommended preparation:* COMM 385.

COMM 489 Campaign Communication (4) Problems in political communication: creating an informed electorate, use of mass media, factors in voter persuasion. Guest experts in political analysis, opinion polling, communication evaluation.

COMM 490x Directed Research (1–8, max 12) Individual research and readings. Not available for graduate credit.

COMM 494x Research Practicum (2–4, max 4) Students gain research experience in the design, implementation, analysis, and reporting of communication research. Students serve as research assistants to faculty members. Not available for graduate credit.

COMM 495 Honors Seminar (4, max 8) Advanced study of issues in communication; recent developments in communication and rhetorical theories. Open only to students in COMM Honors Program. Recommended for seniors. *Recommended preparation:* COMM 301L.

COMM 496x Honors Internship (2–4, max 4) Field experience in applying communication principles to settings in organizations, campaigns, law, or other contexts; analysis and assessment of issues and problems experienced. Not available for graduate credit. Open only to COMM honors students or COMM seniors with 3.0 GPA overall. *Corequisite:* COMM 301L.

COMM 497x Honors Thesis (4, FaSp) Writing of the honors thesis. Not available for graduate credit. Open only to COMM honors students; seniors only.

COMM 498 Ethical Issues in Entertainment and Communication (4) Examines social and political controversies over conflicting ethical standards for communication in a variety of media: mass-media, communication technology, and entertainment. *Prerequisite:* COMM 300; *recommended preparation:* COMM 200, COMM 201.

COMM 499 Special Topics (2–4, max 8) Selected topics in communication.

COMM 504x Interpersonal Communication (4) Theories of communication behavior in relatively unstructured, face-to-face situations; examination of decoder-encoder, message, channel, and situational variables. Not available for Master of Communication Management students.

COMM 508x Power, Politics and Conflict in Communication (4) Human communicative behavior involving the creation and resolution of conflict in interpersonal, small group, and formal organizational settings. Not available for Master of Communication Management students.

COMM 509x Classical Rhetorical Theory (4) Theories of rhetoric from the fifth century B.C. through the fifth century A.D.; emphasis on the Sophists, Plato, Aristotle, Cicero, Quintilian, and St. Augustine. Not available for Master of Communication Management students.

COMM 511x Contemporary Rhetorical Theory (4) Theories of rhetoric from the 18th century to the present; emphasis on Perelman, Burke, Habermas, Grassi, and Booth. Not available for Master of Communication Management students.

COMM 512x Rhetorical Criticism (4) Theories and methods of assessing popular persuasive art forms such as contemporary drama, music, poetry, and journalism as well as traditional forms of public address. Not available for Master of Communication Management students.

COMM 513x Neoclassical Rhetorical Theory (4) Theories of rhetoric from the fifth century A.D. through the 18th century; emphasis on dictamin, praedicandi, poetriae, Alquin, Ramus, Port-Royalists, Bacon, Campbell, Blair, and Whately. Not available for Master of Communication Management students.

COMM 514x Social Movements as Rhetorical Form (4) Study of the rhetoric of social change; methodologies for analysis and appraisal; investigation of specific collective protest and reform movements. Not available for Master of Communication Management students.

COMM 515x Postmodern Rhetorical Theory (4) Implications of postmodernity for rhetorical theory and criticism; issues of textuality, agency, and subjectivity in communication; study of selected postmodern figures. Not available for Master of Communication Management students.

COMM 516x Feminist Theory and Communication (4) Implications of feminist theory for communication; topics include epistemology, critique of science/technology, women and language, feminist approaches to media and film, women and the workplace. Not available for Master of Communication Management students.

COMM 517x Rhetorical Theory and Culture (4) Issues of culture in recent rhetorical theory; in-depth examination of representative idealist, pragmatist, structuralist, critical, and post-modern accounts of the symbolic construction of cultural forms. Not available for Master of Communication Management students.

COMM 518x American Public Address (4) History and criticism of major American speakers and speeches with reference to the social, political, and intellectual background of their times. Not available for Master of Communication Management students.

COMM 519x Cultural Studies in Communication (4) Theoretical foundations, history, and development of cultural studies in communication; implications of issues of nationalism, colonialism, technologies, popular culture, and politics of bodies for communication. Not available for Master of Communication Management students.

COMM 521x Argumentation (4) Foundation of critical deliberation; the nature of informal reasoning; logical and ethical problems; analysis and appraisal of naturalistic argument. Not available for Master of Communication Management students.

COMM 522x Kenneth Burke's Dramatistic Theory (4) Studies the contributions of Kenneth Burke, among the most significant figures in the development of contemporary rhetorical theory and criticism. Not available for Master of Communication Management students.

COMM 524x Small Group Process (4) Contemporary theoretical models; problems in determination and measurement of variables in small group communication environments; assessment of recent research. Not available for Master of Communication Management students.

COMM 525x Humanistic and Social Scientific Approaches to Human Communication I (4) Overview of the humanistic and social scientific approaches to the study of communication; emphasis on rhetorical/critical and macro social scientific perspectives. Not available for Master of Communication Management students.

COMM 526x Humanistic and Social Scientific Approaches to Human Communication II (4) Overview of the humanistic and social scientific approaches to the study of communication; emphasis on macro and micro social scientific, symbolic and structural perspectives. Not available for Master of Communication Management students.

COMM 534 The Culture of New Technologies (4) In-depth approach to cultural impact of the Internet, multimedia, digital imaging, CD-ROM and virtual reality in context with photographic realism, artificial intelligence and virtual communities.

COMM 544 The Arts and New Media (4) Organization, economics, and policy of arts as affected by new technologies. Architecture, design, advertising, and fashion as context. Implications for arts promotion, management, and funding.

COMM 546 Diffusion Theory and Research (4) Diffusion of new ideas over time among the members of a system. Emphasis upon the spread and adoption of new communication technologies.

COMM 550 Quantitative Research Methods in Communication (4) Epistemological assumptions, design, and beginning methods of quantitative analysis in communication research. Not open to Master of Communication Management students.

COMM 552 Qualitative Research Methods in Communication (4) Developing expertise in qualitative methods, including participant-observation, ethnography, discourse analysis and historiography in communication research. Not open to Master of Communication Management students.

COMM 553 Political Economy of Global Telecommunications and Information (4) The political, economic, regulatory, and technological changes that are together creating a new world information economy. The politics of international telecommunications is emphasized.

COMM 554 Regression and Multivariate Communication Research (4) Advanced analysis of variance, regression models, path analysis, MANOVA, and discriminant analysis. Not open to Master of Communication Management students.

COMM 556 Advanced Methods in Communication Research (4) Structural Equation Modeling, LISREL, log linear and other advanced statistical methods used in contemporary communication research. Not open to Master of Communication Management students.

COMM 559 Globalization, Communication and Society (4) Comparative analysis of social, cultural and political impacts of communication technology and media; emphasis given to communication's influence in the social dimensions of globalization. (Duplicates credit in former CMGT 559.)

COMM 560 Critical Approaches to Global Media and Communication (4) The characteristics of global communication in global capitalism and the political economic processes within which policies, interests, and implications of global communication are embedded.

COMM 561 Leading and Communicating Change in Global Organizations (4) Communication perspectives on the process and outcomes of globalization; role of large media organizations in the global flow of information; and leadership and multiculturalism.

COMM 562x Cognitive Approaches to Communication (4) Cognitive theory and research and its application to communication phenomena and processes. Not available for Master of Communication Management students.

COMM 570 Economics of the Communication Industries (4) The economic forces that determine the structure and outputs of communication and media industries, including newspapers, broadcasting, cable, and telecommunications.

COMM 575 Advocacy and Social Change in Entertainment and the Media (4) Examines how diverse groups (i.e., governmental agencies, advertisers, health organizations, advocacy groups, actors, social scientists) attempt to influence audiences through entertainment and traditional media channels.

COMM 578 New Media Literacies (4) Examines intersection of education and participatory culture, literacy and media change, the participation gap, informal learning and knowledge communities, emerging social skills and cultural competencies.

COMM 579 Entrepreneurship in the New Media (4) Examination of how the digital revolution is creating news media entrepreneurs, and changing the way news is disseminated by journalists and heard by consumers.

COMM 580 Media and Politics (4) Mass media in American political life, including political reporting, election campaigns, non-electoral politics, and the media as a political issue.

COMM 582 International Communication: National Development (4) Roles of media institutions and communications behavior in national development, including political, economic, and social spheres; Western and non-Western conceptions of development processes.

COMM 584 Interpreting Popular Culture (4) The use of semiotic, literary, psychoanalytic, and other approaches for describing and interpreting popular cultural phenomena, including television, advertising, film, music, and fashion.

COMM 585x Organizational Communication (4) Theory and research; field experience in analyzing and solving communication problems in organizations. Not available for Master of Communication Management students.

COMM 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the school. Graded CR/NC. (Duplicates credit in former COMM 590.)

COMM 594abz Master's Thesis (2-2-0) Credit on acceptance of thesis. Graded IP/CR/NC.

COMM 598 Practicum in Global Communication Research (4) Development and assessment of research into global communication; selection of appropriate research methodologies; and production of scholarly research. Open to M.A. in Global Communication students only.

COMM 599 Special Topics (2-4, max 8)

COMM 602 Seminar in Persuasion (4) Classical and contemporary theories of persuasion, attitude formation and change; impact of cognition, affect and emotions; cultural and group influences; message strategies and framing. Not open to Master of Communication Management students.

COMM 605 Advanced Macro Theories of Communication I (4) Advanced macro theories of communication and culture creation/change; emphasis on structural-functionalism, neo-Marxism, critical theory, symbolic interactionism, phenomenology, post-structuralism, deconstruction.

COMM 610 Studies in Rhetorical Theory (4, max 12) Problems in rhetorical theory and criticism; advanced, specialized interest areas of individual faculty on the frontiers of knowledge.

COMM 615 Health Communication (4) Evaluation of research about communication in patient care, health campaigns for diverse publics, tools for disease management, and outreach to producers in mass media.

COMM 616 Health Communication for Prevention (4) Examination of health communication efforts for the prevention of diseases or other adverse physical or mental health outcomes by the promotion of behavior change.

COMM 618 Mass Media Effects (4) Theoretical and research questions about mass communication effects; criticism and interpretation of current research and theory, and formulation of new theory.

COMM 620 Studies in Communication Theory (4, max 12) Current problems in communication theory and research: advanced, specialized interest areas of individual faculty on the frontiers of knowledge.

COMM 625 Theory Construction in Communication (4) The nature of theories; conceptual and methodological problems in theory construction; application to contemporary issues in communication research.

COMM 629 Global Culture (4) Examines the relationship of culture to globalization, ranging from nationalism and colonialism to global cultural products, multinational cultural production, diasporic cultures, global media, and cosmopolitanism.

COMM 630 Communication Technology and Social Change (4) Impact of technological advances on human communication practices and theories; trends, forecasts, implications.

COMM 631x Minds and Media (4) Sociopsychological consequences of human interaction with media and computers; evolution of minds; effects of media forms and contents on cognition and affection; concept of presence. Not available for Master of Communication Management students.

COMM 635 Economics of Information (4) Applications of macro and microeconomic principles: economic role of the information sector; production, distribution, and pricing of information products; information in the functioning of markets.

COMM 636 Interpretive and Cultural Approaches in Organizational Communication (4) Interpretive, critical and cultural research in organizational communication; emphasis on narrative approaches to ethnographic studies, critical essays, and quantitative intercultural research in organizational communication.

COMM 637 Current Readings in Organizational Communication (4) Recent developments in organizational communication theory and research; emerging issues and methodologies; future directions.

COMM 638 Global, International and Intercultural Communication in Organizations (4) Communication processes in global organizational transformation; influences of information technology, intercultural variables, and globalization on decision-making, operations and practices of international and transnational organizations.

COMM 640 Communication and Organizational Change (4) Analysis of communication and information networks in organizations and their relationships with communication technologies, organizational behavior, and management.

COMM 641 Organizations and Communication Technologies (4) Communication technology impacts on organizations; organizational influence on technology development and deployment; methods for organizational communication technology studies; critiques and implications for theory and research.

COMM 645 Communication Networks (4) Conceptual and analytic issues in network perspectives; emphasis on communication patterns, processes, content, influences and impacts.

COMM 646 Negotiating Boundaries in Environmental Research (2) Examines how environmental disciplines are discursively constructed; explores problems of utilizing scientific/technical results in policy-making arenas; and introduces strategic communication skills.

COMM 647x Network Society (4) Advanced research seminar examining the interaction between communication technology, society, economy, politics and culture from interdisciplinary and cross-cultural perspectives. Not available for Master of Communication Management students.

COMM 648 Online Communities and Networks (4) Examination of academic research on the social, cultural, political, and economic effects of online communities; policy implications of this research; mobile technology's role in community building. Not open to Master of Communication Management students.

COMM 650 Survey Construction and Validation (4) Principles of survey construction and validation; format selection, sampling, question wording, adaptation for international audiences, response option formats, order, and avoiding acquiescence bias and breakoffs.

COMM 652 Field Research in Communication (4) Examines quantitative and qualitative field methods in communication research; survey development and scaling, content analysis, ethnographic study; quasi-experimental design; time series analysis.

COMM 653 Research, Practice and Social Change (4) Examination of theoretical models and best practices of academic research and advocacy relationships; students conduct a community-based research project using a model of community-based participatory research.

COMM 654 Art, Artists and Society (4) Cultural and temporal differences in defining arts, artists and audiences; transmitting cultural beliefs through art; understanding aesthetic responses; experiences of alienation and incomprehension with art.

COMM 660 Entertainment and Games (4) Contemporary meaning of "entertainment," historical and cultural developments of entertainment; entertainment as psychological process of responding to/interacting with various media. Not open to Master of Communication Management students.

COMM 662 Video Games Research (4) History and content, motivation and selection, reception and reaction processes, and effects of video games; students conduct original research into video game usage and effects. Not open to Master of Communication Management students.

COMM 675 Independent Study (1-4) A supervised course tailored to specific student interests. The professor and student develop a syllabus that permits exploration of advanced or specialized topics. Graded CR/NC.

COMM 694 Preliminary Research Paper (2) Independent research designed to demonstrate the student's ability to conceptualize, conduct, and present scholarly research. Parallel to COMM 794. Graded CR/NC.

COMM 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the school. Graded CR/NC.

COMM 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC.

COMMUNICATION MANAGEMENT (CMGT)

CMGT 500 Managing Communication (4) Production and distribution of information within large organizations; information networks, organization structure, control and decision-making functions. Resources necessary for effective organizational communication systems.

CMGT 501 Communication Management Pro-Seminar (4) Central issues of theory and practice in the management of communication; broad introduction to all areas of the program. Open to Master of Communication Management students only.

CMGT 502 Strategic Corporate Communication (4) Roles, responsibilities and requirements of communication functions within corporations; design and implementation of communication plans; strategic message production for internal and external audiences.

CMGT 503 Strategic Communication Consulting (4) Communication consulting skills including facilitation, training, presentation coaching, benefits writing, speech writing, and communicating organizational change; consulting basics, proposals, cost estimating, and final reports.

CMGT 504 Writing for Strategic Communication (4) Writing skills necessary for an organizational communicator; review of strategic writing fundamentals; development of portfolio of diverse media applications based on strategic corporate communication requirements.

CMGT 505 Communication in Work Settings (4) How work settings determine communication: basic structures of communication, influence of technology, social contexts, and physical space. Applications to management.

CMGT 506 Images and Image Management (4) Examines images and image manipulation in communication, management and social control. Synthesizes work ranging from cognition and interpersonal behavior to mass media and popular culture.

CMGT 507 Information Management (4) Develops conceptual frameworks for understanding information, uncertainty, ambiguity, and knowledge. Principles for decision-making, awareness of biases, mathematics of risk-taking, and practices for sense-making. (Duplicates credit in former COMM 507.)

CMGT 508 Communicating Strategy and Change (4) Examination of role of communication in developing and implementing business strategy; critical assessment and practice with models, tools, and techniques for communicating change.

CMGT 509 Influential Communication in the Marketplace (4) Promotional messages as both creative expressions and agents for behavioral change; application of social science theories of persuasion and compliance in interpersonal and mass-media venues.

CMGT 510 Communication, Values, Attitudes and Behavior (4) Theory and research on value and attitude formation and change; consequences for communication and behavior.

CMGT 511 Health Communication (4) Connections between health providers' communication and patients' well-being; consultation language, nonverbal behavior, physical settings, design of media messages, information technologies in patient education and care.

CMGT 515 Innovation and the Information Economy (4) Analysis of the innovation dynamics fueled by the information and communication technology revolution; economic, technological, institutional and personal underpinnings of innovation and entrepreneurship.

CMGT 520 Social Roles of Communication Media (4) How mass media shape public images of groups, channel political power, promote consumption of goods. Social and political theories as tools in evaluating media impact.

CMGT 528 Web Designs for Organizations (4) Students learn to assess organizations' online needs, to examine the use of the Internet in terms of electronic commerce and global pressures, and design Web page strategies.

CMGT 530 Social Dynamics of Communication Technologies (4) Impact of television, satellites, computers, and other new technologies; competing theories about the role of technology in society; historical effects of introducing new technologies.

CMGT 531 Communication and the International Economy (4) Examines the impact of global economic changes on communications industries, the political and economic forces shaping these industries and the roles of its managers.

CMGT 532 Development of American Electronic Media Industry (4) Origins of American radio and television broadcasting industry and analysis of its development into the contemporary media industry; covers history, technology, regulation, and business practices.

CMGT 533 Emerging Communication Technologies (4) Basics of multimedia; new forms of audio and video interactive technologies; computer communication networks; social, political, cultural, interpersonal, organizational issues related to emerging communication technologies. (Duplicates credit in former COMM 533.)

CMGT 534 Introduction to Online Communities (4) History, technologies and theories of online communities; their uses for organizations; social networking; identity and privacy; participation; collaboration; advocacy and collective action; games and entertainment.

CMGT 535 Online Communities for Organizations (4) How Web-based technologies affect organizational communication, including issues related to collaboration, innovation and knowledge management, forecasting, and networking. (Duplicates credit in former COMM 535.)

CMGT 536 Team Communication and Leadership (4) Theories of effective team communication and leadership; case studies of effective and ineffective teams and leaders; teamwork and communication development; and distributed work teams.

CMGT 537 The Industry, Science and Culture of Video Games (4) History, social dynamics, and cultural impact of video games; developments in technology and design; issues confronting the video game industry and organizations.

CMGT 538 Technologies for Online Communities (4) Survey of contemporary technologies, platforms, languages, collaborative methodologies, and how they are used in combination to produce "social networking" Websites and other related media.

CMGT 540 Uses of Communication Research (4) Applications of both data and interpretation in communications management. Topics include: audience ratings, surveys, experimental tests of programs and campaigns, formative evaluation, secondary data sources.

CMGT 541 Integrated Communication Strategies (4) Communication strategies for product marketing and advertising; communication's role in developing domestic and international marketplaces; practical applications of persuasion theory.

CMGT 542 Business Strategies of Communication and Entertainment Firms (4) An overview of business strategies in media industries. Emphasis on Internet and changing business models. Case studies. Students prepare business plans for digital start-ups.

CMGT 543 Managing Communication in the Entertainment Industry (4) Examination, application and critique of traditional and contemporary organizational communication theory as it applies to the entertainment industry's unique internal and external environments.

CMGT 544 Creating Organizational Identity: Meaning Through Messages (4) Use of rhetorical theories and communication models to create organizational identification with internal and external audiences; the role of values and ethics in creating identities.

CMGT 545 Communication and Global Competition (4) How communication technologies are used to secure competitive advantage; how firms use communication systems to sustain effective positioning in an industry; convergence of communication industries.

CMGT 546 Sports Media and Society (4) History and evolution of sports media industry; traditional, new and alternative sports media; globalization of sports; sports promotions and personalities.

CMGT 547 Distribution of Recordings: Media, Retail and Online Channels (4) Cultural and critical analyses of radio and recording industry development and business strategy; influence of legal and regulatory institutions, impact of new forms of distribution.

CMGT 548 Issues in Children's Media (4) Historical review of children's programming; programming genres; ethical and business issues of marketing to children; children's uses of various media.

CMGT 549 Case Studies in Digital Entertainment (4) Explores foundation of U.S. media policy in the digital age; students prepare White Papers on an urgent issue of contemporary digital media and entertainment policy.

CMGT 550 Hollywood 3.0 — Entertainment Industry in the Convergence Age (4) In-depth analysis of the challenges confronting the entertainment industry in the wake of media convergence including a survey of media convergence history and theories.

CMGT 551 Communicating Entertainment Media Identities (4) Understanding dynamics in entertainment markets enabled by emerging digital technologies; broad and niche strategies to target appropriate audiences, building audience engagement with entertainment content identities.

CMGT 554 Copywriting and Creativity (4) Foundational and advanced practices for copywriting and related design in communication; integrated analysis of concepts and pragmatics surrounding creativity for communication effectiveness.

CMGT 555 Online Marketing Communication Development and Analysis (4) Analysis and development of online communication and marketing campaigns; exploration of current Internet best practices in social media, SEM, privacy, location-based marketing, and online measurement.

CMGT 556 Global Marketing Communication (4) Communication strategies in a global marketing environment; analysis of global-local challenges and opportunities; effective global integrated communication to create and sustain competitive advantage.

CMGT 557 Communication Policy in the Global Marketplace (4) Comparative analysis of various countries' communication and information technology policies; examines developments in telecommunications, broadcasting, and entertainment industries and policy questions for global media marketplace.

CMGT 558 The International Entertainment Marketplace (4) Global influences on entertainment industries (broadcasting, film, telecommunications, Internet, video games, and music); case analyses of specific organizations and geographic regions; impact on local cultures.

CMGT 559 Global Hollywood (4) Examines the influence of the transglobal flow of media between the U.S. entertainment industries and other national media industries.

CMGT 560 Communications Policy (4) Evolving regulation of telephone, radio, television, cable, print, and other media. Major policy-makers and decision points in policy-making at local, state, national, and international levels.

CMGT 565 Communication Law and Broadcasting (4) History and present status of broadcast regulations; emphases on First Amendment, character of regulatory agencies, impact of court decisions, influence of technological advances.

CMGT 566 Communication Law and New Technologies (4) Development of law in newer technologies. Cases include cable television, low power television, direct broadcast satellites, teletext, video cassettes, telephone, data networks, computer regulation.

CMGT 567 Internet Policy, Practice and Regulation (4) Examines how legal decisions impact commercial and personal uses of the Internet; regulatory responses to court decisions.

CMGT 571 Communications Technologies (4) Basic technological concepts necessary to understand the workings of modern communications products and services, to include frequency, bandwidth, electricity, modulation, and digital conversion.

CMGT 572 Telephone, Data, and Video Telecommunication Systems (4) Technological principles and workings of telephone, data, and video telecommunication systems. Issues for management and policy from a technological perspective. *Prerequisite:* CMGT 571.

CMGT 573 Evaluating Communication Needs (4) Participation as consultants in field projects. Use of organizational, interpretive, and statistical methods to design organizational communication systems is emphasized.

CMGT 574 Tele-Media: Strategic and Critical Analysis (4) Strategic and critical analyses of emerging and new communication technologies from historical, business, financial, consumer, and policy perspectives.

CMGT 576 Communication Strategies for Conflict Management (4) Communication strategies for effective negotiation, mediation and facilitation of disputes; structures for public interventions; emergence of online dispute resolution systems.

CMGT 577 Communicating Corporate Social Responsibility (4) Evolution, models, metrics and stakeholders. Key communication issues in designing and implementing initiatives, CSR reporting, strategic partnerships and online communities. Analysis of communication paradoxes.

CMGT 578 Non-profit Advocacy (4) Examines non-profit advocacy (vs. for-profit communication) marked by different rhythmic and creative drivers; non-profit audience analysis; creation of conversations for viral communication impact.

CMGT 580 Chinese Media and Society (4) The political economy of communications and information in China's broader process of development and reentry into global capitalism; particular media and communication conditions and policies.

CMGT 581 Media in Social Services: Design and Evaluation of Campaigns (4) Theory and research issues in the use of media for changing behavior in health, public safety, welfare, and other areas of social services. (Duplicates credit in former COMM 581.)

CMGT 582 Communication for International Development (4) Comparison of traditional communication programs and newer information and communication technologies for analyzing needs of international communities; design, implementation, monitoring, and evaluation of development-related projects.

CMGT 583 Social Marketing and Entertainment Education (4) Theoretical foundations of social marketing and entertainment education; uses of dramatic serials, telenovelas and animation to promote human rights; program design, evaluation.

CMGT 584 Communication and the Multicultural Marketplace (4) Popular culture and marketing communication; race, gender, sexual orientation and consumer culture; consumption patterns and identity, loyalty and self-actualization; cultural marketing campaigns and sociopolitical conflict.

CMGT 585 Communication Leadership in the Entertainment Industry (4) Examination of the communicative elements of leadership in entertainment products and processes; the role of communication experts in supporting, coaching and facilitating entertainment leadership.

CMGT 586 Entertainment Media: Content, Theory, and Industry Practices (4) Examination of social scientific theory and research on patterns of media content; effects of mass media exposure on individuals and society; and industry practices.

CMGT 587 Audience Analysis (4) Fundamental principles of audience research; critique of existing methodologies; implications for global audiences and mass media markets.

CMGT 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the school. Graded CR/NC. (Duplicates credit in former COMM 590.)

CMGT 591 Communication Internship (1-2, max 2) Field experience in applying communication principles to settings in organizations, campaigns, or other contexts; analysis and assessment of issues and problems. Open to Communication Management and M.A., Global Communication students only.

CMGT 592 Theory and Practice of Professional Presentations (2) Application of communication and persuasion theories in the creation of oral presentations; critical assessment of the role of new technologies for professional presentations. Not available for students in the M.A. and Ph.D. programs in communication. Graded CR/NC.

CMGT 597 Communication Research Practicum (2, 4, max 4) Students design and produce an original project appropriate for their emphasis area within the Master of Communication degree; oral defense of project. Open to Master of Communication Management students only. (Duplicates credit in former COMM 597.) *Prerequisite:* CMGT 540.

CMGT 599 Special Topics (2-4, max 8)

PUBLIC DIPLOMACY (PUBD)

PUBD 500 Introduction to the Advanced Study of Public Diplomacy (4) Introduction to the advanced academic study of public diplomacy from multidisciplinary perspectives: including media and communication, international relations and history.

PUBD 502 Historical and Comparative Approaches to Public Diplomacy (4) Examines historical and comparative approaches to public diplomacy. Explores public diplomacy operations in public and private settings, by individuals and institutions. Reviews traditional, critical, war, and peace perspectives.

PUBD 504 Global Issues and Public Diplomacy (4) Focuses on critical global issues/challenges that require some form of intervention from the international community. Taught with active learning strategies: case studies and "problem-based learning."

PUBD 508 The Rhetoric of War and Peace (4) Special exercise in "Think Tank" procedure that explores rhetorics of war and peace from a 21st century perspective.

PUBD 509 Advocacy in Public Diplomacy: Argumentation and Debate (4) Skills and theory based approach to the criticism and development of public diplomacy campaigns. Emphasizes the instruction of advocacy skills to assess the utility of specific campaigns.

PUBD 510 Technologies and Public Diplomacy (4) Explores relationship between diplomacy and technological change. Emphasis on question of how new media may force us to rethink traditional frameworks of public diplomacy.

PUBD 512 Cultural Diplomacy (4) Provides overview of formal cultural diplomacy and concentrates on ways in which non-governmental entities communicate across international boundaries and the effects of those interchanges.

PUBD 514 Corporate Diplomacy (4) Provides basic public diplomacy and public relations tools for global organizations and their foreign publics.

PUBD 515 Transnational Diplomacy and Global Security (4) Examination of the historical and theoretical basis of diplomatic relationships between states, international organizations, and transnational non-state actors in developing global peace and security policies.

PUBD 516 International Broadcasting (4) History, context and practice of global international broadcasting strategies; technological and financial parameters that shape future international broadcasting strategies; use of radio, television, and Internet.

PUBD 518 International Exchanges and Public Diplomacy (4) Examination of educational and cultural exchanges; variety and experience of participants, flagship exchange programs, economic and social implications of the programs, and measurement of outcomes.

PUBD 519 News Media and the Foreign Policy Process (4) Analysis of news media's role in contemporary diplomacy; historical context; consideration of the professional practices of journalists and those who devise and implement foreign policy.

PUBD 520 Regional Studies in Public Diplomacy (4, max 16) In-depth examination of historical, political, economic, cultural factors that influence public diplomacy efforts within specific geographic regions.

PUBD 522 Hard Power, Soft Power and Smart Power (4) Institutional and cultural perspectives on instruments of state power: military, intelligence, trade, and traditional diplomacy; strategic analyses for determining proper use; desirability of combining resources.

PUBD 524 The Public Diplomacy of Trade (4) Public diplomacy's role in shaping ideas about trade and development and in creating trade agreements, and the use of trade agreements as public diplomacy.

PUBD 526 Public Diplomacy Evaluation (4) Critical examination of challenges and benefits of measuring public diplomacy's impact; terminology and mechanics of evaluation, the measurement community, and varying approaches for evaluation.

PUBD 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the school. Graded CR/NC.

PUBD 596 Practicum in Public Diplomacy Research (4) Development and production of original research-based project in the area of public diplomacy. Graded CR/NC.

PUBD 599 Special Topics (2-4, max 8) Special topics in the area of public diplomacy.

School of Journalism

USC Annenberg School for Communication and Journalism 303

(213) 740-0900 (academic inquiries)

(213) 740-3914 (administrative)

(213) 821-0770 (admission inquiries)

FAX: (213) 740-8624

annenberg.usc.edu

Director: Geneva Overholser, M.A.

Associate Director: Laura Castañeda, Ed.D.

Associate Director: William Celis, M.S.

Faculty

Walter H. Annenberg Chair in Communication: Ernest J. Wilson III, Ph.D.

University Professor and Annenberg Family Chair in Communication Leadership: Geoffrey Cowan, LL.B.

Knight Chair in Media and Religion: Diane Winston, Ph.D.

Provost Professor of Communication, Journalism and Cinematic Arts: Henry Jenkins, Ph.D.

Professors: K.C. Cole, B.A.; Geoffrey Cowan, LL.B.*; Ed Cray, B.A.; Félix Gutiérrez, Ph.D.; Henry Jenkins, Ph.D.; Judy Muller, B.A.; Bryce Nelson, M.Phil.*; Geneva Overholser, M.A.; Tim Page, B.A.; Michael Parks, B.A.; Joe Saltzman, M.S.*; Philip Seib, J.D.; Roberto Suro, M.S.

Associate Professors: William Celis, M.S., Jonathan Kotler, J.D.*; Joshua Kun, Ph.D.; Andrew Lih, M.S.; Larry Pryor, M.S.; Sandy Tolan, BFA; Jian Wang, Ph.D.; Diane Winston, Ph.D.

Assistant Professors: Mike Ananny, Ph.D.; Daren C. Brabham, Ph.D.; Kjerstin Thorson, Ph.D.; Aimei Yang, Ph.D.

Professors of Professional Practice: Daniel Birman, M.A.; Laura Castañeda, Ed.D.; Serena Cha, M.S.; Jennifer Floto, M.A.*; Gabriel Kahn, B.A.; Willa Seidenberg, B.A.; Erna Smith, B.J.; Gerald Swerling, M.S.

Associate Professors of Professional Practice: Sasha Anawalt, B.A.; Marc Cooper; Matthew LeVeque, B.A.; Stacy Scholder, B.A.; Burghardt Tenderich, Ph.D.

Assistant Professor of Professional Practice: Robert Hernandez, B.A.

Senior Lecturers: Mary Murphy, B.A.; Richard Reeves, M.E.

Lecturers: Alan Abrahamson, J.D.; Dana Chinn, MBA; Alan Mittelstaedt, B.A.

Emeritus Professors: Murray Fromson; A.J. Langguth, B.A.; Clancy Sigal, B.A.

Emeritus Associate Professor: William Robert Faith, Ph.D.

**Recipient of university-wide or college teaching award.*

Degree Programs

The School of Journalism offers Bachelor of Arts degrees in Print and Digital Journalism, Broadcast and Digital Journalism and Public Relations. It also offers minors in News Media and Society and in Advertising. At the graduate level, Master of Arts degrees are awarded in Journalism, Specialized Journalism and Strategic Public Relations. Students completing the M.A. in Journalism must select one of the five tracks: Long-Form Video, News Video, Audio, Text or Digital. Journalism students learn the techniques of writing, reporting and production for long-form video, news video, audio, text and digital media. They also learn about the role of a free press in a democracy and the historical, legal and ethical aspects of journalism, past, present and future. The *Long-Form Video* track enables students to produce video documentaries for any medium including television and digital media. The *News Video* track enables students to work in any video news environment including television and digital media. The *Audio* track enables students to do news or long-form journalism in any audio environment including radio and digital media. The *Text* track enables students to do news or long-form journalism in any text environment including newspapers, magazines, other print publications and digital media. The *Digital* track provides a thorough grounding in Website production combining traditional journalism with the ability to think flexibly and in an interactive technology environment. The *Specialized Journalism* degree is designed for experienced professionals and recent journalism graduates interested in developing specialized reporting expertise. The *Strategic Public Relations* degree emphasizes the requisite

skills of that discipline, with an emphasis on strategic problem solving, public relations theory and techniques, writing, research-based planning and analysis, case studies, and the application of the discipline to specific industry categories.

The school stresses a broad-based liberal arts education to enhance writing and reporting, and encourages undergraduate students to pursue double majors or minors in disciplines outside the school. In addition to offering international study programs, the school also provides specialized reporting classes in government and public affairs, international affairs, science, religion, education, urban ecology, demography, sports, entertainment, the environment and the arts.

Students seeking to learn journalism principles and improve their multimedia skills should write and report for *neontommy.com* (Annenberg Digital News), *atvn.org* (Annenberg TV News), *annenbergradio.org* (Annenberg Radio News), *intersectionssouthla.org* (Intersections South LA) and *impact.uscannenberg.org* (Impact newsmagazine program). Journalism majors are also encouraged to write and report for the independent student newspaper, the *Daily Trojan*, at *dailytrojan.com*.

The school also advises its students to participate in at least two internships before graduation. The Annenberg Career Development Office has listings for paid and unpaid internships from around the country.

Undergraduate Degrees

The School of Journalism offers Bachelor of Arts degrees in Print and Digital Journalism, Broadcast and Digital Journalism and Public Relations. The school also offers minors in Advertising and News Media and Society. Journalism students are encouraged to pursue double majors or minors in other areas of study. They must consult with an undergraduate journalism adviser at least once each semester to receive academic advisement covering major course selection and university degree requirements.

To meet accrediting guidelines, a minimum of 72 units must be completed outside the major area of journalism. A maximum of 16 units of course work taken prior to high school graduation and a combined 32 units of AP, IB and pre-high school graduation course work will count toward this requirement. Journalism and public relations majors can take up to a maximum of 48 journalism units; however, the major unit total

(44 units) cannot be exceeded, unless the student has fulfilled the accreditation requirement.

A grade point average of at least C (2.0) on all baccalaureate units attempted at USC, as well as on the combined USC-transfer GPA, is required for undergraduate degrees. A minimum cumulative grade point average of 2.0 in all upper division courses applied toward the major is also required. Students must complete each journalism class with at least a grade of C- in order to count the course toward a major requirement. Journalism courses with a grade of D+ or below must be repeated; courses may only be retaken once.

Admission Requirements

Admission is competitive. Fall 2012 incoming freshmen had an average GPA of 3.65 with an SAT score of 1885–2125 (middle 50%). Transfer students had an average college GPA of 3.68. For admission information and deadlines, refer to the USC Admission Website. All transfer applicants must review the transfer admission application guidelines on the Annenberg Website; contact the Annenberg Admissions Office for more information. Upon admission to the School of Journalism, students will lose transfer credits earned in journalism and public relations course work completed at another college or university. USC exclusively uses the Common Application for freshman and transfer admission. Applicants must submit the Common Application and the USC Supplement, both of which can be accessed at commonapp.org. In addition to the university writing samples, a one-page statement of intent is required; instructions are included with the USC Supplement.

Students currently enrolled at USC who wish to change their major to journalism must file a formal application with all supporting documents through the Annenberg Student Services Office. Students who entered USC as freshmen must have 32 units completed with a minimum GPA of 3.0. Students who entered USC as transfers must have 16 units completed at USC with a minimum GPA of 3.0. The 3.0 GPA is a minimum standard and does not guarantee admission.

General Education Requirements

The university's general education program provides coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. This program requires six courses in different categories, plus writing, foreign language and diversity requirements, which together comprise the USC Core. See pages 63xx and 250xx for more information.

Core Curriculum

The School of Journalism's core curriculum prepares students to write and report for print, broadcast and online media. Print and digital journalism, and broadcast and digital journalism students are required to complete both print and broadcast news writing and print and broadcast reporting classes. Print and digital journalism majors must complete a newspaper editing and design class; broadcast and digital journalism majors must complete a broadcast production class. In addition to the online media elements integrated into the news writing and reporting classes, print and digital journalism and broadcast and digital journalism majors must complete an introduction to online media course.

Grammar, Spelling and Punctuation (GSP)

Requirement

Journalism majors enrolling in JOUR 202 and public relations majors enrolling in JOUR 209 will take a diagnostic exam at the beginning of the semester to prepare for the Grammar, Spelling and Punctuation exam (GSP). The instructors will administer the GSP exam on the last day of class.

Students who do not pass the GSP exam may re-take it in the semester immediately following their enrollment in JOUR 202 or JOUR 209. Students will be notified of the exam dates at the start of the semester.

Students must pass the GSP exam by the completion of that following semester or they will not be allowed to progress in the School of Journalism and will be dismissed from the major.

Note: Students with disabilities may register with the Disabilities Services and Programs office (DSP) so the DSP staff can assess the nature of the students' disabilities and recommend the appropriate accommodations to be provided for each student.

Broadcast and Digital Journalism Requirements for the Bachelor of Arts

REQUIRED COURSES, LOWER DIVISION		UNITS
JOUR 201	History of News in Modern America	4
JOUR 202	News writing: Print	3
JOUR 203	News writing: Broadcast	3

REQUIRED COURSES, UPPER DIVISION		UNITS
JOUR 302	Reporting: Print	3
JOUR 303	Reporting: Broadcast	3
JOUR 306	Production: Broadcast	3
JOUR 309	Introduction to Online Media	3
JOUR 310	Investigative Reporting	4
JOUR 462	Law of Mass Communication	4

Two courses from:

JOUR 402	Advanced Television Reporting	4
JOUR 403	Television News Production	4
JOUR 405	Non-Fiction Television	4
JOUR 409	Radio News Production	4

Plus 6 upper-division journalism elective units chosen in consultation with an adviser

Print and Digital Journalism Requirements for the Bachelor of Arts

REQUIRED COURSES, LOWER DIVISION		UNITS
JOUR 201	History of News in Modern America	4
JOUR 202	News writing: Print	3
JOUR 203	News writing: Broadcast	3

REQUIRED COURSES, UPPER DIVISION		UNITS
JOUR 302	Reporting: Print	3
JOUR 303	Reporting: Broadcast	3
JOUR 308	Newspaper Editing and Design	3
JOUR 309	Introduction to Online Media	3
JOUR 310	Investigative Reporting	4
JOUR 462	Law of Mass Communication	4

Two courses from:

JOUR 431	Feature Writing	4
JOUR 435	Writing Magazine Non-Fiction	4
JOUR 440	Environmental Journalism	4
JOUR 448	Government and Public Affairs Reporting	4

Plus 6 upper division journalism elective units chosen in consultation with an adviser

Public Relations Requirements for the Bachelor of Arts

REQUIRED COURSE, LOWER DIVISION		UNITS
JOUR 209	Effective Writing for Strategic Public Relations	4

REQUIRED COURSES, UPPER DIVISION		UNITS
JOUR 350	Strategic Public Relations: An Introduction	4
JOUR 351ab	Strategic Public Relations Media and Content	4-4
JOUR 353	Theoretical Foundations of Strategic Public Relations	4
JOUR 428	Social, Legal and Ethical Foundations of Public Relations	4
JOUR 429	Business and Economic Foundations of Public Relations	4
JOUR 450	Advanced Strategic Public Relations	4
JOUR 463	Strategic Public Relations Research, Analysis and Insights	4

Plus 8 upper division journalism elective units chosen in consultation with an adviser

Advertising Minor

The advertising minor is designed for students interested in building a career in, or developing a better understanding of, the field of advertising. It explores the key role played by advertising in today's global economy. At no time has advertising been more successful or more controversial than it is today, and this program will explore both the positives and the negatives. Emphasis is placed throughout the program on both the practical skills required to meet the demands of the marketplace and the theoretical underpinnings of those practices. Program content includes: the history of advertising; creation of written and visual advertising elements; the measurement, selection and analysis of media; the concept of "branding;" the role of advertising in creating and maintaining successful brands; the analysis of advertising campaign case studies; and the creation of integrated marketing communications campaigns.

REQUIRED COURSES		UNITS
JOUR 340	Introduction to Advertising	4
JOUR 341	Advertising Copywriting	4
JOUR 342	Advertising Media and Analysis	4
JOUR 343	Advertising Design and Production	4
MKT 406	Practicum in Advertising and Promotion Design	4

Select one additional course from the following:

MKT 405	Advertising and Promotion Management	4
MKT 425	Direct Response and Internet Marketing	4
MKT 470	Marketing Research	4
Total units		24

News Media and Society Minor

News media and society is a journalism minor that explores the responsibilities, the influence, the ethics and the diversity of the news media. It explores the myths about news media in the United States and explains what the news media are, how they work, what they do wrong and what they do right, and why they are important to a society whose citizens depend on the free and unfettered flow of information. This minor will help all students in all majors to understand one of the most important and misunderstood forces in American society: the news media.

News media and society benefits every student at the university because it gives students a new appreciation and understanding of the news media that so much influence their lives on a daily basis.

REQUIRED COURSE, LOWER DIVISION		UNITS
JOUR 201	History of News in Modern America	4

REQUIRED COURSES, UPPER DIVISION		UNITS
COMM 371	Censorship and the Law: From the Press to Cyberspace	4
16 upper division journalism units		16
Total units		24

Students are urged to choose their 16 upper division units from these classes:

JOUR 373	The Ethics of Television Journalism	4
JOUR 375	The Image of the Journalist in Popular Culture	4
JOUR 460	Social Responsibility of the News Media	4
JOUR 466	People of Color and the News Media	4
JOUR 467	Gender and the News Media	4

Minor in Nonprofits, Philanthropy and Volunteerism

This four course minor enables students to learn about the nonprofit sector — its organizations, philanthropy and voluntary action. See complete description in the USC Price School of Public Policy section on page 875xx.

Annenberg Career Development and International Programs

Spring Semester in London (Journalism)

The semester program offers students the opportunity to study at City University in London. Participants will be close observers of the British media and will have an opportunity for personal and direct comparison between the more structured and governmentally controlled media system of the United Kingdom and the *laissez faire* approach to media regulation in the United States. Students earn 8 USC journalism elective units and 8 social sciences units.

Spring Semester in London (Public Relations)

In the spring of their junior year, USC Annenberg public relations students spend a spring semester at the University of Westminster in London, one of the leading British institutions for the academic and professional study of public relations and media, culture and society. Students will be integrated into the University of Westminster, and will take courses across the four Westminster campus locations around central London. Students will live in the central London district of Bloomsbury, and will be immersed into the public relations and media hub that is London.

Students earn a total of 16 units at Westminster; up to 8 USC upper division journalism elective units toward their public relations major and 8 general electives units.

Spring Semester in New Zealand (Journalism and Public Relations)

The semester program offers students the opportunity to study at the Auckland University of Technology in New Zealand, a leading southern hemisphere school of journalism and media studies. Fully integrated into the university and its vibrant urban surroundings with strong connections to the nation's indigenous heritage, the program allows students to earn 8 units that fulfill journalism electives and 8 units of general electives.

Summer in Ireland

This summer program offers Annenberg undergraduate students the chance to participate in a formal international internship program in Dublin for nine weeks each summer. The aim of the program is to provide students with theoretical as well as practical experiences working, living and navigating within the international global communications environment. The program is designed around a summer-long online Annenberg course and a nine-week full-time unpaid internship in Dublin. Students will receive 1 unit of credit for JOUR 090x.

International Communication Studies — London, Paris, Prague and Istanbul

The International Communication Studies program (ICS) allows undergraduate students to study a range of approaches to public communication media across Europe.

Students divide the five-week course into stays in Los Angeles, London, Paris, Prague and Istanbul. In addition to regular class meetings, students discuss the interplay of current world issues and international media practices with communication practitioners from international news and public relations media, government institutions, private industry and global organizations.

Students enroll in JOUR 482 Comparative Media in Europe (4 units).

For further information, contact Annenberg Career Development and International Programs at (213) 821-2717, email ascintl@usc.edu or visit annenberg.usc.edu/international.

Honor Society

Lambda Pi Eta is a national communication/journalism honor society that is open to declared communication, journalism and public relations majors who have completed (or are currently registered for) at least 60 units, at least 12 of which are in the major. To be eligible,

students must have a USC GPA and a major GPA of 3.5 or higher.

Academic Integrity Policy

Since its founding in 1971, the USC School of Journalism has maintained a commitment to the highest standards of ethical conduct and academic excellence. Any student found plagiarizing, fabricating, cheating on examinations, and/or purchasing papers or other assignments faces sanctions ranging from an "F" on the assignment to dismissal from the School of Journalism.

Graduate Degrees

The School of Journalism offers three Master of Arts degree programs: Journalism, Specialized Journalism and Strategic Public Relations. Students completing the M.A. in Journalism will choose one of five tracks: Long-Form Video, News Video, Audio, Text or Digital. The *Long-Form Video* track is for students interested in video documentary production. The *News Video* track is for students interested in television news and other video news environments including the Web. The *Audio* track is for students interested in radio production, both news and long-form, or any other audio news environments. The *Text* track is for students interested in any form of print or electronic publication including newspapers and magazines, or any other text news environment. The *Digital* track is for students interested in exploring Website production and other interactive technology environments. The Specialized Journalism degree is designed for experienced professionals and recent journalism graduates interested in developing specialized reporting expertise. The Strategic Public Relations degree is designed to train students for management-level public relations and communication positions in all types of public and private sector organizations.

Admission Requirements

Prerequisites

An applicant must have the equivalent of a four-year bachelor's degree from an accredited college or university.

Criteria

Minimum recommended criteria are a 3.0 GPA for undergraduate work and all graduate work, and valid Graduate Record Examinations (GRE) General Test scores; the GMAT is not accepted in lieu of the GRE. International applicants are required to take the Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS). All completed applications are reviewed by the faculty admission committee even if the applicant's academic quality is below the minimum recommendations. Applicants are strongly encouraged to take the Graduate Record Examinations one month prior to the application deadline. GRE scores are valid for five years; TOEFL and IELTS are valid for two years.

In addition, applicants are judged on a statement of purpose, résumé, writing sample and three letters of recommendation submitted on their behalf. Professional journalism or public relations experience is not required for the two-year degree program but will be considered. Professional work experience is required for the nine-month degree programs in Specialized

Journalism. A professional work bibliography and samples must be uploaded to the online application.

Procedure

Applicants must complete and submit the online USC Graduate Admission Application. Refer to the Annenberg graduate application guidelines on the Annenberg Website for details before initiating the application. In addition, international students must submit official TOEFL or IELTS scores for admission consideration and, after submitting the online graduate admission application, a Confidential Statement for Financing Studies at USC.

Applicants must upload the following materials to the online USC Graduate Admission Application: statement of purpose, unofficial copy of all transcripts, writing sample and résumé. Letters of recommendation may be submitted online or mailed to the Annenberg Admissions Office by the applicant's recommenders. Official GRE and TOEFL or IELTS scores must be reported electronically from the Educational Testing Service (ETS) to USC (institution code 4852). Paper copies of score reports are not required or accepted in lieu of the official ETS report. Official transcripts must be mailed to USC Graduate Admission.

The Annenberg School admits new students to the M.A. in Journalism and the M.A. in Strategic Public Relations degree programs for the fall semester only. The online application deadline for admission and departmental scholarship award consideration is January 2. Students usually receive admission notifications by March 31.

New students are admitted to the M.A. in Specialized Journalism and the M.A. in Specialized Journalism (The Arts) for the summer session only. Refer to the graduate application guidelines on the Annenberg Website for application filing dates.

Degree Requirements

These degrees are under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue (page 97xx) for general regulations. All course work applied toward a degree must be approved by the School of Journalism and the Graduate School.

Master of Arts

Studies toward the Master of Arts in Journalism and the Master of Arts in Strategic Public Relations require 40 units of prescribed courses and approved electives in the student's field of study. Students may take, with prior approval, two of their electives outside the school. No more than 12 units of 400-level course work may be applied toward the Master of Arts in Journalism and the Master of Arts in Strategic Public Relations. Studies toward the Master of Arts in Specialized Journalism require 34 units of prescribed courses and approved electives. No more than 10 units of 400-level course work may be applied toward the Master of Arts in Specialized Journalism. A GPA of 3.0 must be maintained for all work. Students whose grade point averages fall below 3.0 will be placed on academic probation and must improve according to established terms if they are to remain in the school. In the case of courses offered on Credit/No Credit (CR/NC) basis, faculty review of competence will be substituted for grades.

Residence

The School of Journalism will accept only 4 units of approved transferred graduate credit. Normally, full-time students in the Master of Arts in Journalism and the Master of Arts in Strategic Public Relations can complete the program in four semesters. The Master of Arts in Specialized Journalism can be completed in a nine-month enrollment cycle that includes the two-week summer session, plus the fall and spring semesters. These programs may be attended on a part-time basis.

Foreign Language/Research Tool Requirements

There is no foreign language or research tool requirement for the master's degree.

Course Requirements

A master's degree in journalism requires 40 units and a master's degree in strategic public relations requires 40 units. To graduate, students may elect the thesis or comprehensive examination option. Students electing the thesis option are required to enroll in JOUR 594ab (2-2 units). A master's degree in specialized journalism requires 34 units. Specialized journalism students must complete the professional project thesis option and enroll in JOUR 594ab (2-2 units).

Grammar, Spelling and Punctuation (GSP)

Journalism and strategic public relations graduate students are required to complete an online tutorial about Grammar, Spelling and Punctuation (GSP). Specialized journalism graduate students are not required to take this online tutorial. Students are strongly advised to complete the tutorial over the summer prior to beginning classes. They are required to complete the tutorial before the end of the fall semester of their first year. Students who fail to complete the GSP tutorial within the stated time frame will not be allowed to progress in the program and will be dismissed from the School of Journalism.

Note: Students with disabilities may register with the Disabilities Services and Programs office (DSP) so the DSP staff can assess the nature of the students' disabilities and recommend the appropriate accommodations to be provided for each student.

Thesis/Comprehensive Examination

The thesis option will take one of two forms: (1) a professional project presenting the results of an extensive print, broadcast, public relations or new media project completed by the student; or (2) a research thesis presenting the results of primary research undertaken by the student. In either case, students must establish a qualifying exam committee of three faculty members. The committee must be chaired by a faculty member from the School of Journalism and must include one full-time USC faculty member from outside the School of Journalism, either from the School of Communication or another unit on the USC campus. Students must secure approval of the professional project or thesis prior to enrollment in JOUR 594a. Students who elect the thesis option are required to enroll in JOUR 594ab (2-2 units), normally during their second year of study. The 4 units will count toward the approved elective units. Specialized journalism students normally enroll in JOUR 594ab (2-2 units) in their single year of study.

The comprehensive examination option allows students to complete the degree by passing a comprehensive examination in their last semester of course work. The comprehensive examination option is not available to students in the specialized journalism degree program.

Multimedia Journalism Curriculum

Students enrolled in the Master of Arts in Journalism are required to take 12 units of multimedia journalism courses (JOUR 506, JOUR 507, JOUR 509, JOUR 514, JOUR 516 and JOUR 518) in their first year. These courses provide intensive preparation considered necessary for graduate studies in journalism at USC.

In the 21st century, it is imperative that all journalists understand the basic techniques of writing, reporting and production for text, video, audio and digital media. Upon graduation, students will be routinely expected to function in all news media whether it be in traditional media such as television, radio, newspapers and magazines, or whether it be in new media such as electronic publications, Websites and new video and audio environments. The 12-unit multimedia journalism curriculum ensures that every student has a background in all media before completing the more advanced courses in the 40-unit Master of Arts in Journalism. The six multimedia journalism courses are:

JOUR 506 Multimedia Journalism I: Text enables students to learn the basics of news writing and news judgment for text including newspapers, magazines and other publications as well as electronic and new media environments. Students also learn the fundamentals of journalism ethics, how to cover a diverse society, how to pitch stories and how to blog as well as Web aggregation and search optimization skills.

JOUR 507 Multimedia Journalism I: Video and Audio enables students to learn the basics of video journalism for broadcast and the Web. Students learn how to write for the ear and the eye. They learn the techniques of news writing; shooting and incorporating video with audio into television and Web news reports; and the basics of videography and video editing.

JOUR 509 Multimedia Journalism I: Digital enables students to learn the basics of multimedia literacy including still photography, video and audio. Students learn contemporary digital storytelling as well as the legal, ethical and business implications of digital media and journalism.

JOUR 514 Multimedia Journalism II: Text enables students to refine the skills they learned in JOUR 506, reporting and writing daily news and feature stories on deadline for text. They learn beat reporting and interview skills, sourcing, research, fact checking and Web aggregation as well as developing more news blogging and search optimization skills.

JOUR 516 Multimedia Journalism II: Video and Audio enables students to refine the skills they learned in JOUR 507, reporting and writing for television, radio and the Internet. They learn how to pitch stories, how to shoot, write and produce video and audio news

packages; and how to incorporate standups and creative visual storytelling techniques.

JOUR 518 Multimedia Journalism II: Digital enables students to create online story packages with multiple elements including text, visuals, audio, interactivity and navigation. They also learn online ethics and basics of copyright law, design, typography, color and photo usage.

Master of Arts in Journalism

COURSE REQUIREMENTS (40 UNITS)		UNITS
JOUR 505	Journalism: Past, Present and Future	3
JOUR 506	Multimedia Journalism I: Text	2
JOUR 507	Multimedia Journalism I: Video and Audio	2
JOUR 509	Multimedia Journalism I: Digital	2
JOUR 514	Multimedia Journalism II: Text	2
JOUR 516	Multimedia Journalism II: Video and Audio	2
JOUR 518	Multimedia Journalism II: Digital	2
JOUR 560	Seminar in Mass Communication Law	3

In addition, students must select one of the following tracks and complete the requirements for that track:

Long-Form Video:

JOUR 521	Documentary Pre-Production	3
JOUR 522	Video Documentary Production	3
Plus 16 approved elective units.*		

News Video:

JOUR 524	Advanced Broadcast Reporting	3
Plus 19 approved elective units.*		

Audio:

JOUR 523	Public Radio Reporting	3
Plus 19 approved elective units.*		

Text:

One course from:		
JOUR 512	Advanced Interpretive Writing	3
JOUR 517	Advanced Investigative Reporting	3
JOUR 519	Advanced Magazine Writing	3
JOUR 584	Specialized Reporting: Education, Youth and Learning	3
JOUR 585	Specialized Reporting: Religion	3
JOUR 586	Specialized Reporting: Science	3
JOUR 588	Cities, Climate and Risk	3
JOUR 589	Specialized Reporting: The Changing U.S. Population	3
Plus 19 approved elective units.*		

Digital:

JOUR 551	Intermediate Online Publishing	3
JOUR 555	Multimedia and Graphics in Online Publishing	3
Plus 16 approved elective units.*		

*Students electing the thesis option are required to enroll in JOUR 594ab (2-2 units), which count toward elective units.

Master of Arts in Strategic Public Relations

COURSE REQUIREMENTS (40 UNITS)		UNITS
JOUR 504	Strategic Public Relations Research, Evaluation and Insights	3
JOUR 508	Introduction to Strategic Public Relations	3
JOUR 510	Legal, Ethical and Social Foundations of Strategic Public Relations	3
JOUR 527	Multimedia Content Creation for Strategic Public Relations	
JOUR 535	Writing for Strategic Public Relations	3
GSBA 520	Business Fundamentals for Non-Business Professionals	3
Plus 22 units of approved elective courses*		
*Students electing the thesis option are required to enroll in JOUR 594ab (2-2 units) and must complete 18 units of approved elective courses. Students electing the comprehensive examination option must complete 22 units of approved elective courses.		

Master of Arts in Specialized Journalism

COURSE REQUIREMENTS (34 UNITS)		UNITS
JOUR 580	Introduction to Specialized Journalism	2
JOUR 581	Specialized Journalism: Research Methods	3
JOUR 582	Specialized Journalism: Reporting Decisions	3
JOUR 594ab	Master's Thesis	2-2
One course from:		
JOUR 584	Specialized Reporting: Education, Youth and Learning	3
JOUR 585	Specialized Reporting: Religion	3
JOUR 586	Specialized Reporting: Science	3
JOUR 588	Cities, Climate and Risk	3
JOUR 589	Specialized Reporting: The Changing U.S. Population	3
Plus 19 units of approved elective courses		19*
*One elective course must be taken from an Annenberg School program in JOUR, COMM, CMGT or PUBD.		

The Master of Arts in Specialized Journalism is a program geared toward experienced professionals who are choosing to specialize in a field of journalism that requires advanced reporting skills and subject matter expertise. The program is also open to recent journalism school graduates with records of excellence in their university classes and internships and to other outstanding applicants with demonstrated aptitude and expertise in journalism.

Students must begin the program in early August, enrolling in a required 2-unit, intensive summer session course focused on journalism and society and on new media. In addition to the formal classes, the course includes multimedia skills workshops as integral parts. This gateway course provides the master's students with a working knowledge of the specialized journalism background and the multimedia storytelling skills necessary for study in the program. It sets the stage for two semesters of access to courses as substantively broad

as a major research university such as USC makes available and for advanced courses in the School of Journalism's graduate program.

In the fall semester, students will enroll in two courses in the School of Journalism, including a research methods course for journalists and typically a specialized reporting course. With the advice of their faculty mentors, students will select elective course work totaling 8 units appropriate to their fields of specialization. These courses will be drawn from regular graduate and 400 level courses taught across the university and will require approval of the faculty mentor in the School of Journalism. Students also will begin research for their master's professional project. These projects will be extended works of journalism, such as a full-length magazine article, similar radio, television or multimedia treatments or the equivalent in their professional field.

In the spring semester, students will enroll in a journalism seminar focused on the reporting and analysis of decision making and typically an approved elective in the Annenberg School. Students will also enroll in elective course work totaling 8 units, chosen again from offerings across the university and in consultation with their faculty mentors. Finally, students will complete their master's professional project.

The nine-month program has been designed for a summer session, fall and spring semester enrollment cycle; however, students may also elect to complete the program on a part-time basis.

Master of Arts in Specialized Journalism (The Arts)

COURSE REQUIREMENTS (34 UNITS)		UNITS
JOUR 580	Introduction to Specialized Journalism	2
JOUR 582	Specialized Journalism: Reporting Decisions	3
JOUR 591	Arts Writing Practicum	3
JOUR 592	Specialized Journalism: Reporting the Arts	3
JOUR 593	Arts Criticism and Commentary	3
JOUR 594ab	Master's Thesis	2-2
Approved elective courses*		16

*The elective course work must be taken from faculty-recommended lists in at least two arts schools, with at least 8 units from one school. The arts schools are Architecture, Cinematic Arts, Dance, Dramatic Arts, Fine Arts and Music.

The Master of Arts in Specialized Journalism (The Arts) is a program for journalists as well as recent graduates holding bachelor's degrees in journalism or one of the arts or experienced practitioners with a background in the arts who seek to specialize in coverage of the arts and culture. Students will complete 18 units of specialized journalism course work, including a master's professional project, taken within USC Annenberg's School of Journalism and 16 units of approved elective course work from faculty-recommended lists in at least two arts schools with at least 8 units from one school. The arts schools are Architecture, Cinematic Arts, Dance, Dramatic Arts, Fine Arts and Music.

Students must begin the program in early August, enrolling in a required 2-unit intensive two-week

summer session course focused on journalism and society and on new media. In addition to the formal classes, the course includes discussions and workshops as integral parts. This gateway course provides master's students with a working knowledge of the specialized journalism background and the multimedia storytelling skills necessary for study in the program. It sets the stage for two semesters of access to courses as substantively broad as a major research university such as USC makes available.

In the fall semester, students will enroll in an arts writing practicum and an arts reporting seminar. With the advice of their faculty mentors, students will select elective course work totaling 8 units appropriate to their fields of specialization. These courses will be drawn from regular graduate and 400-level courses taught across the arts schools and will require approval of a three-member committee composed of the faculty mentor in the School of Journalism, another member of the journalism faculty and a faculty member from the relevant discipline. Students also will begin research for their master's professional project. These projects may be full-length magazine (print or broadcast) treatments of issues in their field or similar professional work.

In the spring semester, students will enroll in a journalism course focused on the reporting and analysis of decision-making and an arts criticism and commentary course. Students will enroll in elective course work totaling 8 units, chosen again from offerings across the arts schools and in consultation with the mentors and approved by a three-member committee. Finally, students will complete their master's professional project.

The nine-month program has been designed for a summer session, fall and spring semester enrollment cycle; however, students also may elect to complete the program on a part-time basis with the approval of the director of the School of Journalism.

Annenberg Career Development and International Programs

Graduate Journalism Internships — China (Hong Kong or Shanghai), South Africa or United Kingdom

Journalism master's degree students may spend eight weeks at internships in Cape Town, Hong Kong, London or Shanghai during the summer after their first year of graduate study at USC. Students apply to Annenberg Career Development and International Programs in the fall semester of their first year. From mid-May to mid-July, they then enroll in JOUR 540 International Journalism Seminar I and JOUR 545 International Internships in the Media while working full-time at internships with prominent media organizations.

Graduate Strategic Public Relations Internships — China (Hong Kong or Shanghai), South Africa or United Kingdom

Strategic Public Relations master's degree students may spend eight weeks at internships in Cape Town, Hong Kong, London or Shanghai during the summer after their first year of graduate study at USC. Students apply in the fall semester of their first year. From mid-May to mid-July, they then enroll in JOUR 540 International Journalism Seminar I and JOUR 545 International Internships in the Media while working full-time at internships with prominent public relations organizations.

For further information, contact Annenberg Career Development and International Programs at (213) 821-2717, email ascintl@usc.edu or visit annenberg.usc.edu/international.

Academic Integrity Policy

Since its founding in 1971, the USC School of Journalism has maintained a commitment to the highest standards of ethical conduct and academic excellence. Any student found plagiarizing, fabricating, cheating on examinations and/or purchasing papers or other assignments faces sanctions ranging from an "F" on the assignment to dismissal from the School of Journalism.

Courses of Instruction

ANNENBERG SCHOOL FOR COMMUNICATION AND JOURNALISM (ASCIJ)

ASCIJ 100 The Changing World of Communication and Journalism (2, Fa) Survey of major themes in media and communication; exploring what it means to be a professional in the fields of communication, journalism, and public relations.

JOURNALISM (JOUR)

The terms indicated are expected but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

JOUR 090x Internships in the Media (1, max 8, FaSpSm) Intensive experience in the news and other media. Minimum time requirement; enables students to acquire skills and knowledge that cannot be gained in the classroom. Graded CR/NC. Open to journalism majors only. Not available for degree credit.

JOUR 190 Introduction to Journalism (2, Fa) Survey of all media and outlets including print, broadcasting, public relations and online journalism, plus analysis of what it means to be a professional journalist.

JOUR 201 History of News in Modern America (4, FaSp) Understanding news today. A survey of how news is gathered, weighed, and disseminated and how historical events have shaped news in the 20th century.

JOUR 202 Newswriting: Print (3, Fa) Introduction to basic skills of print newswriting, news judgment, construction of print news stories. Social responsibility and ethical framework for print journalists. Typing ability required. *Concurrent enrollment:* JOUR 203.

JOUR 203 Newswriting: Broadcast (3, Fa) Introduction to broadcast newswriting with emphasis on the ear and eye. News judgment. Social responsibility and ethical framework for broadcast journalists. Typing ability required. *Concurrent enrollment:* JOUR 202.

JOUR 204 Newswriting: Online (2) Introduction to online newswriting with emphasis on context and relationship of topics to the story. Social responsibility and ethical framework for online journalists. Typing ability required.

JOUR 209 Effective Writing for Strategic Public Relations (4, FaSp) Focus on the unique writing requirements of social, online, broadcast, print and other media in public relations/strategic communication; emphasis on judgment, context and audience understanding.

JOUR 210x Basics of Broadcast Newsroom Production for Non-Majors Only (2, FaSp) Introduction to broadcast newsroom production; preparation and treatment of form and content; procedures, problems, ethics, and practice in planning and producing a nightly newscast. Open to non-journalism majors only. Not available for degree credit to journalism majors. Graded CR/NC.

JOUR 302 Reporting: Print (3, Sp) Introduction to basic reporting techniques, public records reporting and beginning investigative journalism. Social responsibility and ethical framework for print journalists. *Prerequisite:* JOUR 202, JOUR 203; *concurrent enrollment:* JOUR 303.

JOUR 303 Reporting: Broadcast (3, Sp) Introduction to field reporting, audio and visual media. Social responsibility and ethical framework for broadcast journalists. *Prerequisite:* JOUR 202, JOUR 203; *concurrent enrollment:* JOUR 302.

JOUR 304 Reporting: Online (2) Introduction to computer assisted reporting, precision reporting including statistics. Social responsibility and ethical framework for online journalists. *Prerequisite:* JOUR 202, JOUR 203, JOUR 204.

JOUR 306 Production: Broadcast (3, Fa) Studio and field production for audio and visual media. Social responsibility and ethical framework involving broadcast non-fiction production. *Prerequisite:* JOUR 302, JOUR 303.

JOUR 308 Newspaper Editing and Design (3, Fa) Copyediting and newspaper production layout. Headline and caption writing. Design. Social responsibility and ethical framework involving print production. *Prerequisite:* JOUR 302, JOUR 303.

JOUR 309 Introduction to Online Media (3, FaSp) Convergence journalism and online skill sets. Blogs and Web content production. Social responsibility and ethical framework in digital information technology. *Prerequisite:* JOUR 302, JOUR 303.

JOUR 310 Investigative Reporting (4, FaSp) Reportorial and analytical skills and techniques required for portraying and evaluating contemporary newsworthy events; lectures, discussions. *Prerequisite:* JOUR 302, JOUR 303.

JOUR 330 Photojournalism (4, FaSp) Emphasis on fundamental skills necessary for photojournalism including camera techniques, story ideas and digital darkroom.

JOUR 340 Introduction to Advertising (4, FaSp)

History and development of advertising; basic advertising campaigns showing relationships of marketing, creative, print and electronic media.

JOUR 341 Advertising Copywriting (4, Fa) Writing and editing for advertising and commercial copy for all media. *Prerequisite:* JOUR 340.

JOUR 342 Advertising Media and Analysis (4, Fa)

Selling, planning, buying for the media; advertising's relationship to society and business; media choice. *Prerequisite:* JOUR 340.

JOUR 343 Advertising Design and Production (4, Sp)

Production of advertising materials; emphasis on the creation and design of advertising elements. *Prerequisite:* JOUR 340.

JOUR 350 Strategic Public Relations: An Introduction (4, FaSp)

Strategies and practices in the growing field of public relations/strategic communication, including landmark cases; special emphasis on historical roots, evolution, current and future practice.

JOUR 351ab Strategic Public Relations Media and Content (4-4, FaSp)

a: Introduction to media relations, social media and influencer engagement; intensive writing and creating multimedia content for traditional, emerging and social media. *Prerequisite:* JOUR 350. *b:* Advanced course in writing, digital content and multimedia creation; production of communications collateral for social and owned media channels targeting an array of audiences.

JOUR 353 Theoretical Foundations of Strategic Public Relations (4, Sp)

Emphasis on conceptual, intellectual and analytical skills; knowledge of applied theory for the changing field of public relations/strategic communication. *Prerequisite:* JOUR 350.

JOUR 371 Censorship and the Law: From the Press to Cyberspace (4)

(Enroll in COMM 371)

JOUR 373 The Ethics of Television Journalism (4, Sp)

Ethical questions in television journalism; the application of these moral dilemmas to prepare students for dealing with similar issues in their lives.

JOUR 375 The Image of the Journalist in Popular Culture (4)

The impact of conflicting images of reporters in movies and television on the American public's perception of newsgatherers in the 20th century. A decade-by-decade evaluation.

JOUR 380 Sports, Business and Media in Today's Society (4, FaSp)

An inside look at the symbiotic relationship of sports and the media — from the interdependence of sports and media, to the coverage of sports in newspapers, magazines, radio and television. The economic and ethical issues involved, the conflicts of interest, the history and current status of sports coverage in American media today.

JOUR 381 Entertainment, Business and Media in Today's Society (4, FaSp)

An examination of the symbiotic relationship of the entertainment business and the media; press coverage of the entertainment industry; Hollywood's relationship with news media.

JOUR 390 Special Problems (1-4, Irregular) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

JOUR 400 Interpretive Writing (4) Weekly assignments in the shorter forms of newspaper and magazine writing: essays, reviews, editorials, opinion-page articles, profiles; analyses of major 20th century journalists. *Prerequisite:* JOUR 302, JOUR 303.

JOUR 401L Online Site Management and Production for Journalists (4, FaSp)

Work as executive producers and manage NeonTommy.com, a major website; operate its content management system, produce, curate and aggregate journalism.

JOUR 402 Advanced Television Reporting (4, FaSp)

Role of the broadcast journalism reporter; similarities and differences between print and electronic media; application of audio-video equipment; analysis and practical experience. *Prerequisite:* JOUR 306.

JOUR 403 Television News Production (4, FaSp)

Production of television news programs; preparation and treatment of form and content; procedures, problems, and practice in planning and producing broadcast news materials. *Prerequisite:* JOUR 306.

JOUR 405 Non-Fiction Television (4, FaSp)

Presentation and selection in non-fiction television programs including documentaries, electronic magazines and news series; ethical problems, field research, reporting, interviewing, pre-production. *Prerequisite:* JOUR 306.

JOUR 406 Advanced Broadcasting Production (2)

Advanced analysis, methods, and techniques of radio and television production; preparation and treatment of complex form and content; procedures, problem-solving, and practice. *Prerequisite:* JOUR 402.

JOUR 407 Newsradio (4)

Production of radio news: research, reporting, writing, preparation and treatment of form and content: procedures, problems and practice in producing radio news programs.

JOUR 409 Radio News Production (4, Sp)

Reporting for public radio news: writing newsgathering, editing, vocal delivery. Study of standards, content and ethics. *Prerequisite:* JOUR 202, JOUR 203.

JOUR 410 Radio Documentary (4)

In-depth reporting for public radio news: writing, editing, advanced vocal delivery. Production of long-form radio features and short documentaries. *Prerequisite:* JOUR 409.

JOUR 412 Introduction to Online Publishing (4)

Introduction to the methods, theory and production of news publishing on the World Wide Web including basic HTML, graphics production and news design.

JOUR 413 Introduction to Online Journalism (4)

An introduction to the methods and theory of news publishing on the World Wide Web, with an emphasis on journalism skills and techniques. (Duplicates credit in JOUR 412.) *Prerequisite:* ITP 101x or ITP 105x.

JOUR 420 Advanced Photojournalism (4)

Emphasis on advanced photojournalism techniques for complex photo storytelling; focus on style, content, design, expression and ethics. *Prerequisite:* JOUR 330.

JOUR 421 Photo Editing for News Media (4)

Emphasis on understanding, selection and power of photographs; how they work in concert with words and graphics to inform the public.

JOUR 422 Visual Journalism (4)

Emphasis on photographic storytelling in print, video and Web-based media; understanding of visual thinking and imagery techniques.

JOUR 425 Advanced Radio News Production (4)

Production of public radio news: producing real-time newscasts for Annenberg Radio News. Newsgathering, assigning stories, anchoring, interviewing, working with reporters, editing and producing live programming. *Prerequisite:* JOUR 409.

JOUR 428 Social, Legal and Ethical Foundations of Public Relations (4, FaSp)

Covers the complex intersection of legal standards and regulations, ethical practices and decision making, and social responsibilities for public relations/strategic communication practitioners. *Prerequisite:* JOUR 350.

JOUR 429 Business and Economic Foundations of Public Relations (4, FaSp)

Relationship between public relations/strategic communication and other organizational disciplines; understanding business goals and objectives; economic literacy; financial/investor relations; how PR/communication agencies are built and managed. *Prerequisite:* JOUR 350.

JOUR 430 Writing the Film Review (4, Sp)

Techniques of writing the film review; preparation and treatment of form and content; problems, responsibilities and ethics of film reviewing. *Prerequisite:* JOUR 302, JOUR 303.

JOUR 431 Feature Writing (4, FaSp)

Techniques of writing newspaper feature stories, including the profile, the light feature, the news feature, the in-depth story; the art of narrative writing. *Prerequisite:* JOUR 302, JOUR 303.

JOUR 432 Sports Commentary (4, Fa)

Techniques of reporting and writing sports columns and commentary for print, video, radio and Web-based media.

JOUR 433 Writing About Science (4, Sp)

Techniques of writing about science, including news, profiles, features and commentary.

JOUR 435 Writing Magazine Non-Fiction (4, FaSp)

A seminar in "how to" interview, research, write — and place — professional quality articles for a full range of magazines/newspapers including women's, sports, ethnic, local and national. *Prerequisite:* JOUR 302, JOUR 303.

JOUR 436 Magazine Production (4) Publishing and production technologies; economics of magazine publishing including cost analysis, marketing, advertising, and circulation. *Prerequisite:* JOUR 302, JOUR 303.

JOUR 438 Editing Magazine Non-Fiction (4) Editing magazine non-fiction; defining audiences; editorial functions from assigning stories to creating page layouts. *Prerequisite:* JOUR 302, JOUR 303.

JOUR 440 Environmental Journalism (4, Sp) Techniques of reporting and writing about the environment. Includes both theory and practice needed for reporters specializing in this area of journalism. *Prerequisite:* JOUR 302, JOUR 303.

JOUR 441 Sports Reporting (2, Sp) News and feature coverage of sporting events, including social and economic factors influencing sports in America. *Prerequisite:* JOUR 302, JOUR 303.

JOUR 442 Advanced Reporting in Spanish (4) Coverage of news trends and events in Spanish, including spot news, profiles, features, essays, backgrounders, and analysis of media. Conducted in Spanish. *Prerequisite:* JOUR 302, JOUR 303.

JOUR 443 Business Reporting (2) Techniques of reporting and writing about business, economics and finance. *Prerequisite:* JOUR 302, JOUR 303.

JOUR 444 Reporting on Religion (4) Provides print, online and broadcast journalists with basic tools for reporting on the religion angle of news stories. *Prerequisite:* JOUR 302, JOUR 303.

JOUR 446 Entertainment Reporting (2, Sp) Techniques of reporting and writing about the entertainment business, economics and finances. Analysis of the skills and background needed for reporters specializing in this area of the news. *Prerequisite:* JOUR 302, JOUR 303.

JOUR 447 Arts Reporting (2, Sp) Techniques of reporting and writing about the arts, including television, film, theatre, music, graphic arts, architecture and design. *Prerequisite:* JOUR 302, JOUR 303.

JOUR 448 Government and Public Affairs Reporting (4, Fa) Techniques for covering beats that are the foundation of daily newspaper reporting, including crime, education, immigration and local government. *Prerequisite:* JOUR 302, JOUR 303.

JOUR 449 Reporting Los Angeles (2) Specialized reporting class focused on Los Angeles that requires intensive fieldwork in the neighborhoods, ethnic communities and among local institutions such as City Council, hospitals, police departments, social work agencies, etc. *Prerequisite:* JOUR 302, JOUR 303.

JOUR 450 Advanced Strategic Public Relations (4, FaSp)

In-depth study of methods for planning, managing and evaluating strategic communication campaigns; critical analysis of contemporary cases; development of campaigns for real world clients. *Prerequisite:* JOUR 351b, JOUR 353, JOUR 463.

JOUR 451 Promotional Public Relations (4, Sp) Principles and practices of public relations as a basic component in the promotion and marketing of goods and services; regulatory considerations; consumerism. *Prerequisite:* JOUR 350.

JOUR 452 Public Relations in Entertainment (4, Sp) Public relations in the design, promotion, and presentation of popular entertainment, including films, broadcasting, music, expositions, amusement parks, resorts and arenas.

JOUR 454 Sports Public Relations (2, FaSp) Introduction to the field of sports information and promotion, including lectures, media assignments, role-playing, and presentations by sports professionals. Junior standing.

JOUR 455 Public Relations for Non-Profit Organizations (4, Sp) Introduction to the specialized field of public relations for non-profit and non-governmental organizations; emphasis on case studies, strategic and critical thinking, and campaign development. *Prerequisite:* JOUR 350.

JOUR 456 Public Relations for Diverse Audiences (4) Researching, planning, executing and evaluating communications campaigns aimed at audiences segmented by culture, lifestyle and other factors. *Prerequisite:* JOUR 350.

JOUR 457 The Role of Celebrity in Public Relations (4) Understanding of the history and application of celebrity in public relations, focusing on the entertainment industry and the notoriety attached to politics and the media.

JOUR 458 Public Relations in Politics and Political Campaigns (4, Fa) Application of public relations principles to the context of political campaigns; emphasis on message development and delivery; relationship between candidate, news media, and electorate.

JOUR 459 Fact and Fiction: From Journalism to the Docudrama (4) Historical, legal and ethical limitations to the misrepresentation of fact. Includes print and broadcast journalism, books, theatre, cinema and new technology.

JOUR 460 Social Responsibility of the News Media (4, Sp) News media as instruments of constructive social change; standards of ethics and aesthetics; interactions between news media and cultural settings; social responsibility of news media personnel.

JOUR 461 Literature of Journalism (4) Survey of journalistic careers and times; the influence of editing and reporting on such American writers as Whitman, Twain, Cather, Crane, Runyon, Lardner, and Hemingway.

JOUR 462 Law of Mass Communication (4, FaSp)

Press law; government controls on the news media; legal responsibilities of the journalist.

JOUR 463 Strategic Public Relations Research, Analysis and Insights (4, FaSp) Identification of key strategic insights that drive successful communication campaigns, based on research techniques including surveys, content evaluation and social media monitoring.

JOUR 465m Latino News Media in the United States (4, Fa) History and growing importance of Latino print and broadcast news media in covering immigration, discrimination, culture, social differences and other aspects of U.S. Latino life.

JOUR 466m People of Color and the News Media (4, Sp) Reporting and portrayal of people of color in the United States; impact of racial diversity on media, employment and access, and development of media for individuals and communities of color. Open to non-majors.

JOUR 467 Gender and the News Media (4) Gender and news media evolving images of women and men in print and electronic media. Impact of gender in content and style of news, television and cinema. Open to non-majors.

JOUR 468m The American Press and Issues of Sexual Diversity (4, Fa) Examines how news media reflect and affect perception of gay/lesbian issues; provides historical-contemporary context; arms students to bypass rhetoric and knowledgeably evaluate facts.

JOUR 469 Money, Markets and Media (4, Sp) Practical approach to understanding and writing about economic concepts through current events, case studies and historical examples.

JOUR 470 Community Journalism (2, FaSp) Analyses of ethnic and community issues in community journalism. Students work with local youth to write, edit and design school newspapers and other media. *Prerequisite:* JOUR 302, JOUR 303.

JOUR 474 Interviewing and Profile Writing (2, Sp) Techniques of, and intensive application in researching and writing interviews and profiles for newspapers and magazines. *Prerequisite:* JOUR 302, JOUR 303.

JOUR 475 Publications Design and Technology (4, FaSp) Art, typography, and other graphic elements in publication design; traditional, contemporary, and advanced production methods, processes, and equipment; representative examples; practice in design.

JOUR 476 Reporting Urban Affairs (4, Sp) Examination of U.S. urban issues with an eye toward history for context; study of emerging 21st century solutions for urban communities. *Prerequisite:* JOUR 302, JOUR 303.

JOUR 477 Web Analytics for News and Nonprofit Organizations (2, FaSp) Introduction to using Web traffic and other audience behavior data to manage Websites and social media for news and nonprofit organizations.

JOUR 482 Comparative Media in Europe (4, Sm) Examines print, broadcast and public relations media and their interactive roles in multi-national and supra-national settings at sites in both Western and Eastern Europe. *Recommended preparation:* JOUR 350.

JOUR 483 Negotiating and Reporting Global Change (4) Examines 12 recent history-shaping decisions, negotiations and outcomes; considers how these decisions were reached, reported, positioned publicly and interpreted in retrospect.

JOUR 484 American Religion, Foreign Policy and the News Media (4, Sp) Exploration of the influence of American religion on foreign policy from Colonial Era to present; how the news media, reporting on international stories, shapes public opinion.

JOUR 485 Multimedia PR Content: Digital/Social Media Lab (2, Fa) Hands-on lab; Web and new social distribution platforms; development and management of online content and personal brands; social media trends and applications.

JOUR 486 Multimedia PR Content: Introduction to Digital Design Tools (2, Sp) Hands-on lab; producing multimedia content; basic principles of design; tools and techniques to create digital images and layouts.

JOUR 487 Multimedia PR Content: Introduction to Audio/Video Tools (2, Fa) Hands-on lab; audio/video tools for conceiving, shooting, editing, delivering and archiving compelling stories for online audiences; personal brand building; digital storytelling trends and applications.

JOUR 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

JOUR 498 Honors Seminar (2, Sp) Intensive study of a subject of contemporary relevance or of professional importance to journalists. *Prerequisite:* admission to Honors Program.

JOUR 499 Special Topics (2-4, max 8, FaSpSm) Selected topics in journalism.

JOUR 500 Media and Society (3, Fa) Analysis of major theories on the role of communication media and society with special emphasis on the role and responsibility of the news media.

JOUR 504 Strategic Public Relations Research, Evaluation and Insights (3) Covers use of primary and secondary research methods, analysis, web monitoring and analytics, pre- and post-campaign testing, and other techniques in program planning and evaluation. *Prerequisite:* JOUR 508.

JOUR 505 Journalism: Past, Present and Future (3, Fa) Analyzes history of journalism as the key to understanding its future. Examines critical and ethical questions of who makes news, who covers it and why.

JOUR 506 Multimedia Journalism I: Text (2, Fa) Basics of newswriting and news judgment for text. Fundamentals of journalism ethics, covering a diverse society, pitching stories, blogging and Web aggregation. *Concurrent enrollment:* JOUR 507, JOUR 509.

JOUR 507 Multimedia Journalism I: Video and Audio (2, Fa) Basics of video journalism for broadcast and the Web. Newswriting, shooting and editing images and audio into television and Web news reports. Videography and editing. *Concurrent enrollment:* JOUR 506, JOUR 509.

JOUR 508 Introduction to Strategic Public Relations (3, Fa) A survey of the profession, focusing on the key role of strategic public relations in today's information-based society; provides a social, economic and political context for the program.

JOUR 509 Multimedia Journalism I: Digital (2, Fa) Basics of multimedia literacy including still photography, video and audio. Contemporary digital storytelling. Legal, ethical and business implications of digital media and journalism. *Concurrent enrollment:* JOUR 506, JOUR 507.

JOUR 510 Legal, Ethical and Social Foundations of Strategic Public Relations (3, FaSp) Explores the origins, effects of, and processes for adhering to the complex network of legal, ethical and social responsibilities of the contemporary PR practitioner.

JOUR 512 Advanced Interpretive Writing (3, Sp) Analysis and writing of editorials, essays, Op-Ed page articles, profiles, and other shorter forms of journalism, combined with study of historic practitioners of those forms.

JOUR 513 Advanced Newswriting and Reporting (3) Reportorial and analytical skills and techniques required in searching out and evaluating newsworthy events. Research and publication of stories.

JOUR 514 Multimedia Journalism II: Text (2, Sp) Reporting and writing daily news and feature stories on deadline for text. Beat reporting, interviewing, sourcing, research, fact checking, Web aggregation, blogging, search optimization skills. *Prerequisite:* JOUR 506; *concurrent enrollment:* JOUR 516, JOUR 518.

JOUR 516 Multimedia Journalism II: Video and Audio (2, Sp) Reporting and writing for television, radio and Internet. Pitch, shoot, write, and produce video and audio news packages, incorporating standups and creative visual storytelling techniques. *Prerequisite:* JOUR 507, *concurrent enrollment:* JOUR 514, JOUR 518.

JOUR 517 Advanced Investigative Reporting (3, Fa) Advanced reportorial and analytical skills and techniques required for evaluating newsworthy events. Group research and publication of stories on important current topics.

JOUR 518 Multimedia Journalism II: Digital (2, Sp) Online story packages with multiple elements including text, visuals, audio, interactivity and navigation. Online ethics and basics of copyright law, design, typography, color, photo usage. *Prerequisite:* JOUR 509; *concurrent enrollment:* JOUR 514, JOUR 516.

JOUR 519 Advanced Magazine Writing (3, Fa) Reporting and preparation of articles for publication; analysis of magazine non-fiction markets; research and writing, techniques, and analysis of magazine markets.

JOUR 520 Advanced Broadcast Newswriting (3) Writing for broadcast, preparation and presentation. Responsibility and ethics of broadcast newswriting. Form and content of broadcast news presentation. Similarities and differences between media.

JOUR 521 Documentary Pre-Production (3, Sp) Pre-production of video documentary including selection of topic, diversity, ethical and legal problems, research and reporting techniques, interviewing, writing, balanced presentation, visual and audio literacy.

JOUR 522 Video Documentary Production (3, Fa) Production of video documentary including research and reporting techniques, writing, interviewing, fieldwork, editing, legal issues, economics, aesthetics, balanced presentation, ethics, diversity and production problems.

JOUR 523 Public Radio Reporting (3, Fa) Reporting for public radio-style news: writing, newsgathering, editing, vocal delivery. Techniques applicable for broadcast or Web audio stories.

JOUR 524 Advanced Broadcast Reporting (3, Fa) Reporting and writing broadcast news; analysis and practical experience; role of the broadcast journalism reporter; similarities and differences between media; application of audio-visual equipment.

JOUR 525 Public Radio Documentary (3, Sp) Advanced production techniques for public radio-style reports: writing, sound, editing, narrative voice. Techniques applicable for broadcast features or Web audio documentaries. *Prerequisite:* JOUR 523.

JOUR 526 Advanced Broadcast News Production (3) Production of television news programs; preparation and treatment of form and content; procedures, problems and practice in planning and producing broadcast news materials.

JOUR 527 Multimedia Content Creation for Strategic Public Relations (3, FaSpSm) Covers the conceptualization and creation of strategy-based, engaging, primarily web-based multimedia content for use by organizations of all types. *Prerequisite:* JOUR 508 and JOUR 535.

JOUR 529 International Journalism and Public Relations Seminar (2) Preparatory course for Annenberg's summer international internships programs. Introduction to the history, politics, culture and media landscape of the internship country.

JOUR 530 Strategic Public Relations Management (3, Sp) An analytical, case study-based approach to strategic campaign planning, management and execution, with heavy emphasis on problem solving and the role of research.

JOUR 532 International Public Relations (3) Public information policies and practices of national and supranational government units and national and multinational corporations involved in international relations.

JOUR 534 Case Studies in Public Relations (3, Sp) Analysis of landmark and contemporary public relations cases; evaluation of current literature, programs, and professional personnel; identification of emerging issues.

JOUR 535 Writing for Strategic Public Relations (3, FaSpSm) Intensive focus on the specialized writing requirements of online, broadcast, print and other public relations media; includes content analysis of strategic public relations materials.

JOUR 536 Digital, Social and Mass Media Public Relations Strategies (3, FaSp) Analysis of shifting media environment; development and execution of multi-platform campaigns based on organizational goals and audience characteristics.

JOUR 537 Public Relations and Branding (3, Fa) Concept of branding, including brand definition, brand engagement, brand management and the role of public relations in creating brand value.

JOUR 538 Advanced Entertainment Public Relations (3, Sp) In-depth study of the creation and protection of reputations for entertainment properties of all types and the characteristics that distinguish it from other disciplines.

JOUR 540 International Journalism Seminar I (3) Historical perspective of foreign correspondence; examination of the working conditions, problems and consequences of reporting from abroad.

JOUR 542 Foreign Reporting (3) News stories analyzed, researched, and critiqued for validity and background; projects to include editorials, news stories, magazine articles or broadcast reports.

JOUR 543 Field Study (3) Study of contemporary institutions in selected regions of the world. Graded CR/NC.

JOUR 545 International Internships in the Media (1, Sm) Intensive field experience at international news media and public relations organizations. Graded CR/NC.

JOUR 550 Introduction to Online Publishing (3) Methods, theory and publishing of online news; HTML skills, graphics production and design theory.

JOUR 551 Intermediate Online Publishing (3, Fa) Advanced concepts in online publishing; focus on databases, editing, scripting and authoring applications for news Websites.

JOUR 555 Multimedia and Graphics in Online Publishing (3, Sp) Focuses on the process of creating multimedia, images and graphics for news storytelling on the Web; integration of interactive content, animation and video. *Prerequisite:* JOUR 551.

JOUR 556 Online Journalism Seminar (3, Sp) Writing and reporting for the Internet and other technology platforms; computer-assisted reporting; multimedia storytelling. *Prerequisite:* JOUR 551.

JOUR 560 Seminar in Mass Communication Law (3, FaSpSm) Analysis of major elements of mass communication law, legal issues in contemporary mass communication, and the impact of legal trends on professional journalists.

JOUR 563 Promotional and Product Public Relations (3, Sp) Planning, managing and evaluating integrated communications campaigns utilizing public relations strategies in concert with advertising and other marketing disciplines; emphasis on research, case studies and campaign development.

JOUR 565 Corporate Public Relations and Reputation (3, Fa) Planning, managing and evaluating strategic public relations campaigns that achieve corporate business goals by effectively communicating with key constituencies and managing organizational reputation.

JOUR 566 Public Relations for Multicultural and Niche Audiences (2) Developing, managing and evaluating campaigns designed to reach audiences segmented by culture, lifestyle and other factors.

JOUR 568 Crisis Management in Strategic Public Relations (3, FaSpSm) Focuses on theories, concepts and practices in risk assessment, issues monitoring, and crisis anticipation/management in a wide variety of organizational contexts, and from multiple perspectives.

JOUR 569 Ethics in Public Relations (3) Application of public relations principles to ethical conduct in a business, government agency, non-profit organization or consulting entity; emphasis on applicable cases and dialogue.

JOUR 571 Advanced Sports Reporting (3, Fa) Seminar in how to report and write sports: news, previews, profiles, features, columns.

JOUR 572 Reporting on Entertainment and Popular Culture (3, Fa) Reporting about entertainment, popular culture and their impact on American society; survey of past media coverage and current practices.

JOUR 575 Advocacy and Social Change in Entertainment and the Media (4, Fa) (Enroll in COMM 575)

JOUR 576 The Image of the Journalist in Popular Culture Seminar (3, Sp) Study and analysis of the conflicting images of the journalist in popular culture and its impact on the public's perception of the media and newsgatherers.

JOUR 580 Introduction to Specialized Journalism (2, Sm) Understanding the role of specialized journalism and its changing role in U.S. news media; audience interest in areas of specialized coverage.

JOUR 581 Specialized Journalism: Research Methods (3, Fa) Advanced skills in the use of expert sources, scholarly resources, computer-assisted and investigative reporting in specialized journalism; social and ethical issues in specialized reporting.

JOUR 582 Specialized Journalism: Reporting Decisions (3, Sp) Reporting and analysis of decision making; case studies and analytical tools in dissecting decisions for readers, listeners and viewers.

JOUR 583 Managing Communication in the Entertainment Industry (4, Fa) (Enroll in CMGT 543)

JOUR 584 Specialized Reporting: Education, Youth and Learning (3, Fa) Reporting and writing on education; survey of historical and contemporary issues affecting children, families and public education.

JOUR 585 Specialized Reporting: Religion (3, Sp) Reporting and writing on religion; survey of world religion, religion and public life — including politics, gender and science.

JOUR 586 Specialized Reporting: Science (3, Fa) Reporting and writing on science; survey of scientific research fields and evaluation of evidence and claims.

JOUR 587 Audience Analysis (4, Fa) (Enroll in CMGT 587)

JOUR 588 Cities, Climate and Risk (3, FaSpSm) Reporting and writing on urbanization, climate change and environmental harm.

JOUR 589 Specialized Reporting: The Changing U.S. Population (3, Fa) Reporting and writing on immigration and other forms of demographic change; survey of immigration, the journalism it has generated and the impact of coverage.

JOUR 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

JOUR 591 Arts Writing Practicum (3, Fa) Intensive writing workshop on the craft of arts criticism and persuasive writing of different arts genres.

JOUR 592 Specialized Journalism: Reporting the Arts (3, Fa) Reporting and writing on the arts; strategies for arts journalism in the digital era; survey of essays and reviews by great critics.

JOUR 593 Arts Criticism and Commentary (3, Sp) Writing workshops and independent fieldwork; development of critical skills to write socially valuable criticism and commentary about art, entertainment and culture.
Prerequisite: JOUR 591.

JOUR 594abz Master's Thesis (2-2-0, FaSpSm) Credit on acceptance of thesis. Graded IP/CR/NC.

JOUR 595 Critical Thinking: The Art and Science of Not Getting Fooled (3, Fa) Researching and writing about how not to get fooled as a journalist; includes research, writing and discussion. Open only to journalism and specialized journalism majors.

JOUR 599 Special Topics (2-4, max 8, FaSpSm) Seminar in selected topics in journalism.

USC Kaufman

Glorya Kaufman School of Dance



The newly established USC Glorya Kaufman School of Dance is the sixth arts school at USC and the first school to be established through an endowment in nearly 40 years. The transformational gift from Ms. Kaufman will "have a profound impact on the art of dance — not only at USC, but throughout the world," said USC President C. L. Max Nikias.

The USC Kaufman School of Dance is the newest school to debut at the University of Southern California. Founded in 2012 by a transformational gift from Glorya Kaufman, a visionary Los Angeles philanthropist whose commitment to dance is celebrated nationwide, the Kaufman School offers a wide variety of classes in a multitude of dance styles from hip hop to ballroom to ballet. These classes are open to all USC students. The school also offers a minor in dance.

Beginning in the fall of 2015, the Kaufman School will offer a Bachelor of Fine Arts degree to a very select number of undergraduates who wish to pursue dance as their major. This four-year degree will be housed in the Glorya Kaufman International Dance Center, which is now under construction. Applications for the BFA will be accepted in the fall of 2014.

USC Kaufman School of Dance**Office of the Dean****840 W. 34th Street, MUS 403****Los Angeles, CA 90089-0851****(213) 740-9327****Email: uscdance@usc.edu****Administration**Robert A. Cutietta, D.Ed., *Dean***Faculty***Associate Professor:* Margo Apostolos, Ph.D.

Adjunct Faculty: Jesus Fuentes; Rafael Garcia; Miranda Garrison; Alexander Greschenko; Nikolaos Lagousakos; Joey Letteri; Victoria Looseleaf; Angeliki Papadakis; Jacqueline Pavlich; Bradley Rapier; Kenji Yamaguchi

General Information**Degree Program**

The USC Kaufman School of Dance will offer an undergraduate Bachelor of Fine Arts degree. This is a professional degree program for students preparing for careers in dance. Applicants to the school will need to meet USC's rigorous academic standards while also demonstrating an advanced level of achievement in dance. The inaugural class will enter the school in fall 2015.

Minor in Dance

The dance minor is designed to present undergraduate students with a focus on the discipline of dance as an educational tool for study and research. The dance program offers a variety of courses in dance technique; dance history and philosophy; choreography; production; and performance.

This minor offers students an interdisciplinary experience compatible with a variety of majors. Student choreography, performances and productions include work with international dances as well as dances in the Southern California/Los Angeles region.

The minor in dance is open to all undergraduates, and 27–28 units are required to complete the program. Students applying to this minor must have a minimum GPA of 2.0 (A = 4.0).

UPPER DIVISION REQUIRED COURSES (16 UNITS)		UNITS
DANC 380	Historical Approaches to Dance	4
DANC 388	Senior Seminar in Dance	4
DANC 482	Choreography for Television	4
DANC 483	Dance Performance	4

ELECTIVES (11–12 UNITS)		UNITS
DANC 280	Dance as an Art Form	4
DANC 282*	Activities for Professional Preparation: Dance (concurrent enrollment in a 2-unit, 100-level technique course required)	1
DANC 285L	Elements of Dance Production	4
DANC 385L	Choreography and Performance	4

*TECHNIQUE COURSES		UNITS
DANC 181a	Modern Dance	2
DANC 181b	Modern Dance	2
DANC 182a	Advanced Modern Dance	2
DANC 182b	Advanced Modern Dance	2
DANC 183a	Ballet	2
DANC 183b	Ballet	2
DANC 183c	Ballet	2
DANC 183d	Ballet	2
DANC 184a	Jazz Dance	2
DANC 184b	Jazz Dance	2
DANC 184c	Jazz Dance	2
DANC 188a	International Style Ballroom Dance (to include folk and square dance)	2
DANC 188b	International Style Ballroom Dance	2

Courses of Instruction**DANCE (DANC)**

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

DANC 181ab Modern Dance (2-2, FaSpSm) *a:* Techniques of modern dance; elements of dance composition. *b:* Advanced techniques of modern dance; elements of choreography and production. (Duplicates credit in former THTR 181ab.)

DANC 182ab Advanced Modern Dance (2-2, FaSpSm) *a:* A continuing study of modern dance skills toward an advanced level of competency. *b:* Advanced technique and composition. (Duplicates credit in former THTR 182ab.)

DANC 183abcd Ballet (2-2-2-2, FaSpSm) *a:* Beginning techniques of classical ballet consisting of basic barre and center work; basic body and arm positions, port de bras, allegro and elementary adagio. *b:* Intermediate techniques of classical ballet with intermediate barre, adagio, allegro combinations and pirouettes; development of a working knowledge of ballet terminology. *c:* Advanced techniques of classical ballet; emphasis on clarity and precision with execution of movement. Study of beats, tours, advanced adagio and allegro, grand combinations, pointe-work. *d:* Elementary to intermediate level ballet technique en pointes for women and men; conditioning and barre exercises; variations from classical and modern ballets. (Duplicates credit in former THTR 183abcd.)

DANC 184abc Jazz Dance (2-2-2, FaSpSm) *a:* Beginning techniques and practice of jazz dance. *b:* Continuing study in the techniques of jazz dance. *c:* Advanced techniques of jazz dance: advanced warm up, rhythmic and isolation exercises, turns and advanced jazz sequences or combinations. (Duplicates credit in former THTR 184abc.)

DANC 185 Hip-Hop Dance (2, max 4, FaSpSm) Elements of Hip-Hop dance, including technique, movement, musical rhythm, tempo and phrasing required to develop the skills needed to perform this unique dance form. (Duplicates credit in former THTR 185.)

DANC 188ab International Style Ballroom Dance (2-2, FaSpSm) Representative ballroom dances: waltz, slow foxtrot, tango, and quickstep. *a:* Beginning. *b:* Intermediate. Graded CR/NC. (Duplicates credit in former THTR 188ab.)

DANC 189ab Tap Dance (2-2, FaSpSm) *a:* Basic tap rhythms developed into elementary dances with progression of time steps and other combinations of sound. *b:* Continuing study of tap dancing including more complicated rhythmic patterns and combinations; polishing technique; combinations to varied music and introduction to advanced steps and combinations. (Duplicates credit in former THTR 189ab.)

DANC 280 Dance as an Art Form (4, FaSpSm) Gateway to the minor in dance. Concepts of art exemplified in dance; origins and evolution of classic and contemporary dance forms; elements of art criticism applied to dance productions. Required attendance at dance concerts and art exhibits. (Duplicates credit in former THTR 280.)

DANC 282 Activities for Professional Preparation: Dance (1) Fundamental movements and composition in modern and aerobic dance; study of popular social dance forms; teaching and evaluation methodologies; course and class planning. (Duplicates credit in former THTR 282.)

DANC 285L Elements of Dance Production (4) Theoretical aspects of creativity, choreography, accompaniment, dance notation, and production; application in individual and group composition. Lecture, 2 hours; performance laboratory, 6 hours. (Duplicates credit in former THTR 285.)

DANC 380 Historical Approaches to Dance (4) Roles of dance in pre-technological societies; development of classic and romantic ballet from medieval, baroque, and renaissance periods to contemporary forms. (Duplicates credit in former THTR 380.)

DANC 385L Choreography and Performance (4) Aesthetic concepts in dance and related arts; integration of concepts in choreography, performance, and production; philosophical bases of dance criticism; critical analysis of performances. Lecture, 3 hours; performance laboratory, 3 hours. (Duplicates credit in former THTR 385.)

DANC 388 Senior Seminar in Dance (4) Synthesis of principles, philosophy, and history of dance, culminating in senior individual project. (Duplicates credit in former THTR 388.)

DANC 482 Choreography for Television (4) Creative choreography of theatrical dance for television. Emphasis on rhythmic analysis, versatility, composition, notation techniques, and stylizing. (Duplicates credit in former THTR 482.)

DANC 483 Dance Performance (2, max 8, FaSpSm) Preparation, rehearsal, and performance of experimental choreography in main stage repertory. (Duplicates credit in former THTR 483.)

Ostrow School of Dentistry of USC



Michael Rice DDS '14 treats a patient in a USC mobile dental unit in Nairobi, Kenya, as part of the USC Dental Humanitarian Outreach Program, a student-run organization that organizes multiple trips each year to provide dental services to underserved communities. The Kenya project is the largest to date and is believed by the Kenya Ministry of Medical services to be the largest dental outreach effort in Kenya's history.

Since 1897, the Ostrow School of Dentistry of USC has provided students with unique, intensive clinical experiences using the most advanced techniques and technologies in the field. Graduates form a tightly knit community of proud alumni, provide top-notch patient care, conduct world-class research and lead the oral health field.

The school's strength is its educators. Their world-renowned expertise, combined with innovative curricula, gives students the strong clinical education they need to become great oral health professionals. The curricula include the Doctor of Dental Surgery program, the baccalaureate in dental hygiene program and several postdoctoral specialty programs: endodontics, general practice residency, operative dentistry, oral and maxillofacial surgery, orofacial pain, oral medicine, orthodontics, pediatric dentistry, periodontology and prosthodontics. Other programs include an advanced standing program for international dentists; online Master of Science degrees in dental hygiene, geriatric dentistry, orofacial pain and oral medicine; and master's and Ph.D. degrees in craniofacial biology.

The Ostrow School of Dentistry's celebrated status as a well-funded dental and craniofacial research powerhouse allows students to enrich their education through laboratory activities and bolster their clinical talents with strong scientific foundations.

Through community service, the Ostrow School of Dentistry provides valuable clinical experiences to the students while helping disadvantaged individuals improve their oral health. Serving the surrounding community, whether at the school's dental clinics or at community outreach sites throughout Los Angeles and Southern California, helps students develop clinical competency and learn to treat all members of a diverse community with care and compassion.

Ostrow School of Dentistry of USC dentistry.usc.edu

Administration

Avishai Sadan, DMD, *Dean*

Mahvash Navazesh, DMD, *Associate Dean of Academic Affairs and Student Life*

Yang Chai, DDS, Ph.D., *Associate Dean of Research*
Roseann Mulligan, M.S., DDS, *Associate Dean of Community Health Programs and Hospital Affairs and Chair, Division of Dental Public Health and Pediatric Dentistry*

Ilan Rotstein, DDS, *Associate Dean of Continuing Education and Chair, Division of Endodontics, Oral and Maxillofacial Surgery and Orthodontics*

Casey Chen, DDS, Ph.D., *Chair, Division of Periodontology, Diagnostic Sciences and Dental Hygiene*

Sillas Duarte, Jr., DDS, Ph.D., *Chair, Division of Restorative Sciences*

Malcolm Snead, DDS, Ph.D., *Chair, Division of Biomedical Sciences*

James Gordon, M.A., M.Ed., Ed.D., *Associate Dean and Chair, Division of Biokinesiology and Physical Therapy*

Florence Clark, M.S., Ph.D., *Associate Dean and Chair, Division of Occupational Science and Occupational Therapy*

Faculty

G. Donald and Marian James Montgomery Professor in Dentistry: Avishai Sadan, DMD

George and Mary Lou Boone Chair in Craniofacial Molecular Biology: Yang Chai, DDS, Ph.D.

Don and Sybil Harrington Foundation Chair in Esthetic Dentistry: Pascal Magne, DMD, Ph.D.

Sykes Family Chair in Pediatric Physical Therapy, Health and Development: Linda Fettes, Ph.D.

Ralph W. and Jean L. Bleak Professor of Restorative Dentistry: Winston Wan-Li Chee, BDS

Charles M. Goldstein Professor of Community Dentistry: Roseann Mulligan, DDS, M.S.

USC Associates Assistant Professor of Dentistry: Michael L. Paine, DDS, Ph.D.

Professors: Yang Chai, DDS, Ph.D.*; Chih-Kuang Casey Chen, DDS, Ph.D.; Glenn Clark, M.S., DDS; Paul C. Denny, Ph.D.*; Tina F. Jaskoll, Ph.D.; Stanley F. Malamed, DDS; Michael Melnick, DDS, Ph.D.; Cedric Minkin, Ph.D.; Roseann Mulligan, M.S., DDS; Mahvash Navazesh, DMD; Janet Moradian-Oldak, Ph.D.; Michael Paine, BDS, Ph.D.; Pragna Patel, Ph.D.; Ilan Rotstein, DDS; Avishai Sadan, DMD; Michael L. Schneir, M.S., Ph.D.; Songtao Shi, DDS, Ph.D.; Harold C. Slavkin, DDS; Jorgen Slots, MBA, DDS, Ph.D., DMD; Malcolm L. Snead, DDS, Ph.D.

Associate Professors: Winston Wan-Li Chee, BDS; George C. Cho, DDS; Sillas Duarte, Jr., DDS, Ph.D.; Robert G. Keim, DDS, Ed.D.; Ralph L. Leung, M.S., DDS;

Pascal Magne, DMD, Ph.D.; Glenn Sameshima, DDS, Ph.D.; Arnold Tiber, DDS, Ph.D.; Homayoun H. Zadeh, DDS, Ph.D.

Associate Professor (Librarianship): John P. Glueckert, MLIS

Assistant Professors of Dentistry: Ruchi Bajpai, Ph.D.; Amy Merrill-Brugger, Ph.D.; Ramiro Murata, DDS, Ph.D.; Parish P. Sedghizadeh, DDS

Professors of Clinical Dentistry: Jane Forrest, RDH, Ed.D.; Michael Jorgensen, DDS; Diane Melrose, BSDH, M.A.; Michael J. Mulvehill III, DDS, MBA*; Dennis-Duke R. Yamashita, DDS

Associate Professor (Clinical Scholar): Stephen Yen, DMD, Ph.D.

Associate Professors of Clinical Dentistry: Loris Abedi, DDS*; Gardner Beale, DDS; Richard Furuichi, DDS; Joyce Galligan, R.N., DDS; Phuu Han, DDS, Ph.D.; Michelle Ikoma, DDS; Kian Kar, M.S., DDS; James W. Kim, DDS; Thomas Allen Levy, M.S., DDS; Niel Nathason, MPH, M.A.; Saravanan Ram, DDS, MDS; Sandra K. Rich, MPH, Ph.D.; Ramon Roges, DDS; Eddie Sheh, DDS*; Donna Smith, RDH, M.S.Ed.; Richard Udin, DDS

Assistant Professors of Clinical Dentistry: Tae Ahn, DDS*; Lupe Arevalo, RDH*; Kim Austin, DDS; Jucheng Chen, DDS, Ph.D.; Laura Elizondo, DDS; Reyes Enciso, Ph.D.; Sharon Faust, DDS; Jan P. Gonzalez-Torres, DDS; Dan Grauer, DDS, Ph.D.; Richard Green, M.S.Ed., DDS; Veronica Greene, MPH, DDS; Ripsik Gukasyan, DDS; Tran Han, DDS; Helia Hooshangi, DDS; Julie Jenks, M.S., MPH, DDS; Boris Keselbrener, DDS; Tae Kim, DDS; Janet Lent, DDS; Richard S. Lin, DDS; W. Michael Madden, DDS; Ali Ostadali Makhmalbaf, DDS; Karen Matsumura-Lem, RDH, DDS; John Morzov, DDS; Eleanor Nielsen, BSDH; Jose Polido, DDS; Elham Radan, DMD, M.Sc.; Piedad Suarez, DDS; Santosh Sundaresan, DDS; Marlene Talley, DDS; Thomas Tanbonliong, Jr., DDS; Antonia Teruel, DDS, Ph.D.; Chieng Christian Tu, RDH*; Dinh L. Vo, DDS; Christina Wong, DDS

Research Assistant Professors: Matthew K. Lee, M.D.; Yan Zhou, Ph.D.

Clinical Professors: Ralph B. Allman, M.S., DDS; David Good, DDS; John J. Lytle, DDS, M.D.; Margarita Zeichner-David, Ph.D.

Clinical Associate Professors: Barbara D. Edwards, RDH; John Kishibay, DMD, Ph.D.; Bach Le, DDS, M.D.; Camille Nakamura, DDS; Michael Padilla, DDS; Anthony Park, DDS; Hovhanness Shnorhokian, DMD, Ph.D.; James W. Tom, DDS, M.S.; Arman Torbati, DDS; Leon Unterman, DDS

Clinical Assistant Professors: Mainul Ahsan, Ph.D.; Alexander Alcaraz, DMD; Pearl Ambrosio-Caligiuri, DDS; Gabriela Anderson, DDS; Vartuhi Avanesian, DDS; Nasrin Bahari Chopiuk, Ph.D.; Yaara Berdan, DDS; Ketty (Ching-Hsiu) Chiu, DDS; Nam Cho, DDS; Xiao

Mei Cui, DDS; Sibel Dincer, DDS, M.S.; Alon Frydman, DDS; Ellen M. Grady, B.A.; Melina Gregorian, DDS; Mina Habibian, DDS, Ph.D.; Stan Hanes, DDS; David Kang, DDS; Daniel Kolzet, DMD; Jennifer I-Chen Lo, DDS; Armando Lopez, DDS; Stacy Love, DDS; Joel McPherson, DDS; (Mehdi) Mohammad Mohammadi, MPH, DDS; Naomi Nguyen, DDS, M.S.; Lisa Oshiro, RDH; Vanessa Parady, DDS, Ph.D.; Dieu Pham, DDS, M.D.; Vanthi Pham, DDS; Andrea C. Pinnick, DDS; Lisa Popkoff, DDS; Narendranath Ravindranath, Ph.D.; Lucille Rotstein, B.Ch.D.; Liane K. Sakai, DDS; Daniel Schecter, DDS; Michael Schneider, DMD; Judith Tefft, Ph.D.; Anita Tourah, DDS; Christopher Truhan, DDS; Zaw Win Tun, BDS, M.Sc.; Michelle Vanderlinde, Ph.D.; Fabiana Varjao, Ph.D.; Xun Sean Xu, Ph.D., DDS; Kiyomi Yamazaki, DDS, Ph.D.

Clinical Instructors: Amelia Andrade-Garcia, RDH; Joan Beleno, RDH; Kathryn Bowns, RDH; Linda Brookman, RDH; Linus Chong, DDS, M.S.; Shahrok Jedian, DDS; Senovita Lopez, RDH; Gerald McClellan, DDS; Albert Mizrahi, DDS; Diane Nguyen, DDS; Michaela Nguyen, RDH; Theresa Nguyen, RDH; Michael Rabinovici, DDS; Carlos Sanchez, RDH; Gail Stewart, M.A.; Joyce Sumi, RDH; Eugene Zakaryan, DDS

*Recipient of university-wide or school teaching award.

Degrees Offered

The Ostrow School of Dentistry awards the following degrees: the Bachelor of Science, Dental Hygiene; the Master of Science, Dental Hygiene; the Master of Science, Geriatric Dentistry; the Master of Science, Orofacial Pain and Oral Medicine; the Doctor of Dental Surgery; the Advanced Operative Dentistry Certificate/M.S., Craniofacial Biology; the Advanced Orthodontics Certificate/M.S., Craniofacial Biology; the Advanced Pediatric Dentistry Certificate/M.S., Craniofacial Biology; the Advanced Periodontology Certificate/M.S., Craniofacial Biology; Advanced Dental Education Certificate programs in Endodontics, Operative Dentistry, Oral and Maxillofacial Surgery, Orofacial Pain, Oral Medicine, Pediatric Dentistry, Periodontology, and Prosthodontics; Master of Science in Craniofacial Biology; and the Doctor of Philosophy in Craniofacial Biology. The school also offers a minor in craniofacial and dental technology.

General Information

The Grading System

Grades are issued by members of the faculty to indicate to students their level of achievement and to provide information to committees given the responsibility of reviewing a student's total academic record and assigning honor or deficient status.

Newly admitted students to the Doctor of Dental Surgery (DDS) program, the Advanced Standing Program for International Dentists and Bachelor of Science in Dental Hygiene (B.S.) students are bound by the university grading system (excluding plus/minus grades), which is detailed in the Academic Standards section of this catalog (page xx).

Grades used by course directors of required advanced specialty classes are: "Cr" — credit, "CrH" — credit

with honors and “Ncr” — no credit. Other notations appearing on the transcript are: “IP” — indicates that the grade in a course is not issued until a subsequent trimester; “IN” — incomplete work; “ICW” — incomplete clinical work; “MG” — missing grade; “W” — withdraw. Students pursuing a Master of Science or Doctor of Philosophy in Craniofacial Biology and students in dental hygiene, doctoral and international classes should refer to the Academic Standards section of this catalogue, page xx.

Probation and Disqualification

A student evaluation policy has been developed that outlines methods by which the faculty can recognize outstanding achievements by students and identify those who have difficulty meeting the school's academic standards.

In this policy, the procedures dealing with the assignment and consequences of academic status, including academic probation and disqualification, are outlined in detail. It is hoped that the development of specific guidelines will eliminate confusion and minimize the amount of time spent in determining the student's status, thus allowing faculty and students to concentrate on their primary responsibility — the training of dental health professionals. Copies of student professional performance evaluation committee guidelines are available online on the dental school Website intranet.

DDS (includes Advanced Standing Program for International Dentists)

A student will be placed on academic warning if the GPA of a given Academic Time Unit (ATU) falls below a 2.0; if a failing course grade in a course of 1 unit or less is received; if a D grade is received in 3, 4, or 5 units; if a student does not successfully pass National Board Part I and National Board Part II and if in the judgment of the student professional performance evaluation committee, such a warning is warranted for other reasons, such as poor attendance or consistent tardiness.

A student will be placed on academic probation if a failing grade is received in 2 or more units completed in one ATU; if a second consecutive academic warning is warranted; if two conditions that justify academic warning are met in a single ATU or if a single condition is met twice in an ATU, or if a student receives an F or D in a module that results in an MG, or freshman students in trimesters I, II or III will be placed on academic probation if the quality of preclinical work is unsatisfactory as reflected by a minimal passing or failing (D or F) grade in the module or if the quality of preclinical work is poor enough to jeopardize student's timely transition to clinic with the rest of the class or if warranted by other factors related to the quality of preclinical/clinical work such as poor attendance, unprofessional behavior and/or poor performance in written examinations or, if in the judgment of the student professional performance evaluation committee, probation is warranted by other academic factors; or if recommended by the group practice director, due to quality and/or quantity of clinical work.

A student will be placed on clinical probation upon recommendation of the group practice director if a grade of “F” is received in any of the graded categories of group practice performance, or, in the judgment of the group practice director, probation is warranted by

other factors related to the delivery of health care or clinical accomplishment.

A student will be considered for disqualification if (1) at the end of any trimester during the freshman year (trimesters I, II, III) a student's continued lack of preclinical accomplishment is significant enough to suggest a deterioration of preclinical skills; (2) a second academic probation is warranted; (3) a failing grade is not reconciled; (4) at the end of the academic year the grade point average for the preceding year is below 2.0; (5) academic probation is warranted while repeating a trimester on probation; (6) a deficiency in any area is determined by the Student Professional Performance Evaluation Committee to be insurmountable; (7) at the end of the second trimester of the Advanced Standing Program for International Dentists (ASPID) the cumulative average is less than 2.0; (8) it is recommended by the group practice director, based on severe and irreconcilable deficiencies relating to the quality and/or quantity of patient treatment; and (9) if, at the end of any trimester following trimester VII, a student's ongoing lack of clinical accomplishment is significant enough to suggest a deterioration of skills and/or inadequate treatment of patients assigned to his/her care.

B.S., Dental Hygiene Students

A student will be placed on academic warning if (1) the GPA for any given Academic Time Unit (ATU) is less than 2.0; (2) a failing grade is received in a 1-unit (or less) course; (3) a grade of “D” is received in a 3-, 4- or 5-unit course. A student will be placed on academic probation if 2 units or more of failure are recorded at the end of any trimester; if a second consecutive academic warning is warranted; or if, in the judgment of the Student Professional Performance Evaluation Committee, probation is warranted.

A student will be placed on clinical probation if a grade of “F” is received in any of the graded categories of group practice performance, or, in the judgment of the group practice director, probation is warranted by other factors related to the delivery of health care or clinical accomplishment.

A student will be considered for disqualification if (1) a third probation is warranted at the end of any trimester; (2) a failing grade is not reconciled; (3) at the end of the academic year the grade point average for the preceding year is below 2.0; (4) academic probation is warranted while repeating a trimester on probation; and (5) a deficiency in any area is determined by the Student Professional Performance Evaluation Committee to be insurmountable. In addition to the Dental School evaluation policy (which evaluates courses taken in the Dental School), students in the Dental Hygiene Program are also bound by the university's academic status requirements.

Advanced Specialty Students

A student will be placed on academic probation if a failing grade is received in any course or if, in the judgment of the program director, a student's performance warrants such status due to academic or other factors. A student may be disqualified if the stipulations of a probationary period are not met by the required deadline, a failing grade is not reconciled in the period specified by the course director, or if a deficiency in any area is acquired which is determined by the program director

to be insurmountable. A student who is placed on academic probation a second time can continue in the program only with the approval of the program director and the Advanced Student Professional Performance Evaluation Subcommittee.

Honor Status

The Ostrow School of Dentistry recognizes excellence in achievement by assigning special honor status during the course of study and by presentation of awards upon graduation.

Dean's List

Students who complete all course work by a prescribed deadline and earn a grade point average of 3.5 or above for a trimester are placed on the Dean's List. Students shall not be placed on the Dean's list if they are on deficient academic status during that trimester (i.e., academic probation and continued academic probation).

Omicron Kappa Upsilon Honor List

The local chapter of Omicron Kappa Upsilon (OKU), a national dental honor fraternity recognizes the top 10 percent of each doctoral dental class at the end of each academic year (August) by including these students on the OKU Honor List. The determination of the top 10 percent is based on a yearly GPA. It should be noted that placement on the OKU Honor List has no relationship to membership in OKU, which is based on overall academic achievement and professional development.

Graduation Awards

There are numerous awards made each year at graduation to recognize excellence in members of the graduating doctoral, dental hygiene and ASPID classes. A complete listing is available at the Ostrow School of Dentistry.

Voluntary Withdrawal/Leave of Absence

The Ostrow School of Dentistry recognizes that in some special instances it may be necessary or beneficial for a student to interrupt or discontinue dental education. A student wishing to withdraw from school or request a leave of absence must contact the Office of Academic Affairs for procedures to be followed. An approved leave of absence will not be granted for more than one year.

Students at the School of Dentistry who have not been formally dropped by the school, are considered enrolled each term unless they have submitted a letter of intent to withdraw. A student's verbal indication that he or she intends to withdraw or failure to settle a fee bill are not sufficient to eliminate the student from class rosters. Final course grades will be collected for students who do not have a letter of intent to withdraw on file with the Office of Academic Affairs.

A student who withdraws at any time during the first three weeks of a trimester will receive no grades for enrolled courses. A student who withdraws after three full weeks of an Academic Time Unit (ATU) will receive a mark of “W” for all enrolled courses not completed. Withdrawal is not permitted after the 12th week of a trimester.

Family Educational Rights and Privacy Act

The University of Southern California recognizes and acts in full compliance with regulations set in accordance with the Family Educational Rights and Privacy Act of 1974 (The Buckley Amendment). A student may have access to all records about him or her maintained by the university except those considered confidential under the act. Students of the School of Dentistry wishing to review records or to appeal for a change in those records should contact the Ostrow School of Dentistry of USC Registrar. A small charge may be made to cover the time and costs of duplication of the record.

Tuition and Fees (Estimated)

Tuition at the Ostrow School of Dentistry is charged on a flat fee basis for enrollment in the regular degree and advanced certificate programs of the school. Exceptions do not apply to students who have courses waived based on their prior education. In such cases, students are charged the standard flat fee for the program in which they are enrolled.

Auditors pay the regular tuition rate. Auditors are not required to participate in class exercises (discussions and examinations); they receive no grades or credit.

The information outlined here is for Ostrow School of Dentistry fees and tuition deposits only. For information about Ostrow School of Dentistry tuition and university fees, refer to the Tuition and Fees section of this catalogue, page xx. The university reserves the right to assess new fees or charges as it may determine.

Processing Fee (not refundable):

Domestic applicants.....	\$85.00
Graduates of foreign dental schools or students requiring a student visa	145.00
Commitment Deposit (not refundable)	
Dentistry	1,500.00
Dental Hygiene	500.00
International Dental and Advanced	1,500.00
Pre-Tuition Payment (refundable in accordance with the refund policy).....	1,500.00

Mandatory Fees (School of Dentistry fees only; for other fees, refer to the Tuition and Fees section of this catalogue.)

CDA Dues.....	10.00
Doctoral dental and Advanced Standing Program for International Dentists students only; spring only.	
ASDA Dues.....	70.00
Doctoral dental program and Advanced Standing Program for International Dentists students only; fall only.	
Special Fees	
Transcript Fee.....	10.00
Gown Usage Fee	165.00
Disability Insurance (Doctoral, Advanced Standing Program for International Dentists and Advanced Certificate)	108.00
Scrubs (first year only).....	210.00

Student Issue

Figures shown below are approximate. The School of Dentistry reserves the right to change fees at any time.

DDS Program

1st Year	Instruments and supplies	\$9,072.00
	IMS Fee	4,191.00
	Textbooks	4,636.00
2nd Year	Instruments and supplies	3,150.00
	IMS Fee	4,191.00
	Textbooks	2,438.00
3rd Year	Instruments and supplies	315.00
	IMS Fee	4,191.00
	Textbooks	259.00
4th Year	Instruments and supplies	29.00
	IMS Fee	2,794.00
	Textbooks	505.00

Advanced Standing Program for International

Dentists

Incoming

(Su 2013)	Instruments and supplies	\$11,239.00
	IMS Fee	1,397.00
	Textbooks	0.00

1st Year	Instruments and supplies	86.00
	IMS Fee	4,191.00
	Textbooks	259.00
2nd Year	Instruments and supplies	417.00
	IMS Fee	2,794.00
	Textbooks	505.00

Advanced Dentistry Programs

IMS Fee	
Endodontics, 1st Year.....	\$2,379.00
Endodontics, 2nd Year	2,188.00
Orthodontics, 1st Year.....	1,050.00
Orthodontics, 2nd Year	900.00
Orthodontics, 3rd Year	600.00
Pediatric Dentistry, 1st Year	150.00
Pediatric Dentistry, 2nd Year.....	2,038.00
Periodontology, 1st Year	2,338.00
Periodontology, 2nd Year.....	2,188.00
Periodontology, 3rd Year	750.00
Prosthodontics, 1st Year	2,529.00
Prosthodontics, 2nd Year.....	1,997.00
Prosthodontics, 3rd Year	600.00
Orofacial Pain and Oral Medicine, 1st Year	2,147.00
Orofacial Pain and Oral Medicine, 2nd Year	600.00

Dental Hygiene Program

1st Year	Instruments and supplies	\$3,538.00
	IMS Fee	1,473.00
	Textbooks	2,308.00
2nd Year	Instruments and supplies	280.00
	IMS Fee	982.00
	Textbooks	911.00

Financial Aid

Detailed information concerning financial aid programs available to dental students can be obtained by contacting the Ostrow School of Dentistry of USC Office of Financial Aid at (213) 740-2841, uscdfda@usc.edu or visit dentistry.usc.edu/admission.

Undergraduate Degree

Bachelor of Science in Dental Hygiene

The mission of the USC Department of Dental Hygiene is to educate and prepare dental hygiene leaders for careers in a diverse and changing health care environment. Implicit in this is a desire to provide a liberal education as well as outstanding clinical experiences. The baccalaureate dental hygiene program is a combination of dental and dental hygiene sciences, supporting sciences and general education.

The curriculum reflects the core values of the profession in private and public health settings. The program is committed to creating a humanistic, educational environment that will facilitate the development of responsible, ethical, oral health professionals who are sensitive to the patient needs and competent in the dental hygiene process of care.

Educational and clinical services provided by dental hygiene students include dental health education,

patient assessment, disease prevention and non-surgical periodontal therapy for a diverse population of patients. The program strives to produce graduates who will advance the profession of dental hygiene and improve dental health care through evidence-based research and scholarly activities. Finally, graduates are competent in self-assessment and scientific methodology in preparation for lifelong learning.

The Bachelor of Science degree in Dental Hygiene requires two academic years of pre-dental hygiene courses followed by two additional years of enrollment in the dental hygiene program.

Admission

Admission to the school is granted through the Office of Dental Admissions and Student Affairs that receives and processes all applications, evaluates credentials and mails letters of acceptance to applicants who qualify for entrance. Because of the university's selective

admissions policy and limited enrollment, only those applicants are accepted who present evidence of intellectual promise and strong personal qualifications, including good moral character and sound health. Prior to enrollment, accepted students must provide evidence of sound health and meet the school's health requirements. (Before registration, the Student Health Service form, signed by the applicant's attending physician, must be filed with the Student Health Center.) Admission to the university in all cases is determined by the Office of Admissions at USC.

Application forms may be obtained by mail, online or in person from the Office of Dental Admissions and Student Affairs. A nonrefundable \$25 fee must be sent with the completed dental hygiene application. An additional application fee must be submitted to the USC Undergraduate Admission Office.

Credentials for admission must include complete records of all previous college or university work. The

student must request the registrar of each school attended to forward one official transcript of record directly to the Office of Dental Admissions and Student Affairs. These should include the program of studies in which the applicant is currently registered. The university does not initiate requests for these credentials.

Applications for the Bachelor of Science in Dental Hygiene should be filed well in advance of February 1 of the year in which the student wishes to be admitted. The program begins in the fall. Applicants for admission are requested to file their applications before they have completed one full year of college predental work or pre-hygiene class.

Although students may transfer to USC at any time and begin prerequisite course work, the dental hygiene curriculum begins in the junior year. Admission to the university does not guarantee admission to the dental hygiene program.

Two applications are required, one for the USC Undergraduate Admission Office and one for the School of Dentistry. See the Undergraduate Education Admission section of this catalogue.

Admission Requirements

Between 30 and 40 students are admitted each year for the curriculum that leads to the Bachelor of Science in Dental Hygiene.

The Committee on Admissions examines credentials and bases its decision on the objective evaluation of these factors: preprofessional training, evidence of scholarship and personal evaluation of the student.

Minimum entrance requirements include: graduation from an accredited secondary school and completion of the following courses which may be transferred in from another college or university or taken at USC prior to being admitted to the dental hygiene program.

General Biology

One semester with lab is required.

Anatomy

One semester with lab is required.

General Chemistry with Lab

One year is required.

English Composition

One year is required. Must include course work equivalent to WRIT 140 and one semester of any transferable English course.

General Physiology Lab

One semester is required.

General Microbiology

One semester is required.

Nutrition

One semester is required.

Introduction to Sociology

One semester is required.

General Psychology

One semester is required.

Public Speaking

One semester is required.

General Education Requirements

The university's general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. This program requires six courses in different categories, plus writing and diversity requirements, which together comprise the USC Core. See pages xx and xx for more information.

All dental hygiene students have to follow the university's general education requirements.

There is no minimum number of transfer units you must complete before applying to admissions. No foreign course work will be accepted. Dental hygiene prerequisites and lower division general education categories must be completed or in progress by the time of application to the dental hygiene program. All prerequisite course work including required general education course work must be completed with a grade of "C" or better.

The following courses are not transferable: dental assisting, dental technology, secretarial science (typing, shorthand, etc.), or other technically or vocationally related courses.

All entrance requirements must be completed by June 15 preceding the September of admission, and complete final credentials must be on file in the Ostrow School of Dentistry of USC Office of Admission and Student Affairs by July 15 preceding enrollment. Notification of acceptance will be sent by the Office of Admission and Student Affairs after May 1.

Orientation

Students who have been accepted into the program and who have reserved their place in the class by paying the appropriate tuition deposit will be forwarded orientation materials by July 15.

Orientation is traditionally scheduled during the week before the first week of classes. The purpose of the program is to acquaint incoming students with the School of Dentistry, its policies, programs, faculty and facilities. Incoming students receive financial counseling and purchase their initial equipment issue as part of orientation activities.

Graduation Requirements

A student is eligible for the Bachelor of Science in Dental Hygiene after attaining the qualitative and quantitative level expected in the dental hygiene curriculum. This specifically includes: no marks of "F," "IN," "ICW," "IP" or "MG"; no conditions existing at the termination of the final trimester that would result in academic probation, clinical probation or academic disqualification. In addition, each student must have demonstrated the characteristics expected of a health professional and have fulfilled the financial and other obligations required for graduation.

In addition to meeting the academic requirements indicated above, students must have a completed administrative clearance form on file in the Office of Academic Affairs before a degree can be conferred. This administrative clearance indicates that the student has

met financial and other obligations to the university and to the student's patients.

Curriculum

Courses listed are required for completion of the degree. Course listings are current as of 2012–2013 and are subject to change without notice by action of the Ostrow School of Dentistry and the university.

Bachelor of Science in Dental Hygiene Curriculum

REQUIRED COURSES		UNITS
AMED 502	Emergency Medicine	2
AMED 524	Pain and Anxiety Control	2
ANAT 521	Head and Neck Anatomy	2
DBIO 310	Oral Biochemistry	2
DHIS 310	Basic Tissues and Histology and Embryology	2
DHYG 311ab	Fundamentals of Clinical Dental Hygiene Practice	3-3
DHYG 314L	Dental Morphology Laboratory	1
DHYG 316	Patient Education in Preventive Dental Care	1
DHYG 318	Dental Specialties	2
DHYG 320	Preventive Dental Therapy	2
DHYG 401	Introduction to Advanced Dental Hygiene	2
DHYG 410abc	Clinic: Dental Hygiene	2-7 each (3, 6, 6)
DHYG 412	Preventive Dental Care Programs	1
DHYG 414ab	Advanced Dental Hygiene	2-2
DHYG 422	Essentials of Dental Hygiene Practice	1
DHYG 424ab	Research Methods	1-1
DHYG 516ab	Community Oral Health	2-2
DIAG 415	Radiographic Techniques	1
DIAG 521	Principles of Oral Radiology	2
DMAT 316L	Dental Materials and Clinical Procedures	2
DPHR 410	Principles of Pharmacology	2
GSPD 504	Dental Treatment of the Geriatric and Special Patient	2
HBHV 310	Interactional Skills in Dental Hygiene	1
MBIO 310	Principles of Microbiology and Immunology	2
OCCL 310	Fundamentals of Dental Morphology	1
OMOD 506	Infection Control	1
PEDO 310	Principles of Dentistry for Children	1
PERI 310ab	Introduction to Periodontal Diseases	1-1
PERI 415	Basic Periodontal Therapy	1
PERI 504	Advanced Periodontics	1
PTHL 312abc	Medicine and Pathology	1-3-2

Minor in Craniofacial and Dental Technology

The Ostrow School of Dentistry, the Viterbi School of Engineering Department of Biomedical Engineering and the Dornsife College of Letters, Arts and Sciences Department of Biological Sciences jointly offer the minor in craniofacial and dental technology. This minor is designed to prepare engineering, pre-dental, pre-medical and biological sciences undergraduates to enter the

dental biotechnology industry as well as to introduce them to recent innovations in craniofacial sciences and therapeutics. The course work introduces students to concepts in craniofacial histology and embryology, head-and-neck anatomy, genetics, biochemistry and biotechnology as well as applications to dental diagnostics, imaging and dental therapies (dental implants, restorative dentistry, craniofacial genetics).

This minor requires 16 core units and a minimum of 4 units of electives. Students who have not fulfilled prerequisite requirements for core or elective courses will have to take additional units, depending on their major. In addition, students must take at least 16 units not used for their major or offered by their major department.

Please see a biomedical engineering, biological sciences or Ostrow School of Dentistry adviser for specific program requirements.

CORE REQUIRED COURSES, UPPER DIVISION		UNITS
DENT 412	Fundamentals of Craniofacial and Dental Technology	3
DHIS 310	Basic Tissues and Histology and Embryology	2

BISC 320L	Molecular Biology	4
BISC 325*	Genetics	4
BME 410*	Introduction to Biomaterials and Tissue Engineering	3
Total core units:		16

ELECTIVES		UNITS
Enroll in at least two courses from the following:		
BISC 330L*	Biochemistry	4
BISC 403*	Advanced Molecular Biology	4
BISC 406L*	Biotechnology	4
BISC 410*	Applications of Molecular Biology to Medicine	4
BISC 435*	Advanced Biochemistry	4
BME 404*	Biomechanics	3
BME 416	Development and Regulation of Medical Products	3
BME 451*	Fundamentals of Biomedical Microdevices	3
DENT 221	Introduction to Dentistry	1
ENGR 305	Engineering Biology Matters	3
HP 340L	Health Behavior Statistical Methods	4

HP 350L	Health Behavior Research Methods	4
MASC 310	Materials Behavior and Processing	3
Total elective units:		4-8

*Prerequisite required

Progressive Degree Program in Public Health

The public health program admits a limited number of USC undergraduate students to pursue the MPH degree while completing a bachelor's degree. Applicants to the program must have completed 64 units of course work and must submit their applications prior to completion of 96 units of course work. Applicants do not have to submit GRE scores, but are expected to have a minimum GPA of 3.5 at the time of application. The application for admission to a progressive degree program must be accompanied by an approved course plan proposal and letters of recommendation from two USC faculty members. The requirements for both the bachelor's degree and the MPH degrees must be satisfied. For further details on progressive degree programs, see page xx.

Professional Degrees

Doctor of Dental Surgery

The Doctor of Dental Surgery (DDS) program covers 11 consecutive 14-week trimesters. The course of study maximizes the interrelationship of all basic sciences and clinical detail sciences required by the Commission on Dental Accreditation of the American Dental Association.

USC's reputation for excellent preparation of its graduates for private practice has been enhanced by curriculum changes that permit students to begin clinical experience in their first year. At the same time, opportunity and encouragement are given to those who might elect to pursue careers in teaching and research.

Admission

The Ostrow School of Dentistry admits 144 students each year for the curriculum leading to the Doctor of Dental Surgery. Admission to the school is granted through the Office of Admission and Student Affairs which receives and processes all applications, evaluates credentials and notifies applicants who qualify for entrance by forwarding letters of acceptance. Students are selected by the Admissions Committee, which bases its decision on consideration of an applicant's personal qualities, aptitude and superior scholarship necessary for the successful study and practice of dentistry. Candidates who have received or will receive a baccalaureate or higher degree will be considered more favorably than applicants who have fulfilled only minimum requirements. As a precondition of enrollment, accepted students must undergo a background screening and provide evidence of sound health and meet the school's health requirements.

Admission information may be obtained by mail, online or in person. Address inquiries to: Ostrow School of Dentistry of USC, Office of Admission and Student Affairs, 925 W. 34th Street, Room 201, Los Angeles, CA

90089-0641, (213) 740-2841, email: uscscadm@usc.edu or access the school's Website at dentistry.usc.edu.

Admission Requirements

Minimum entrance requirements include: (1) graduation from an accredited secondary school, with credit for at least 12 academic units, including three in English, three in one laboratory science course, two in one foreign language and two in college preparatory mathematics; (2) a minimum of 60 semester units, or the equivalent completed or in progress, at the time of application, in an accredited college or university in the United States or Canada. A baccalaureate or higher degree is preferred. No more than 60 semester hours earned at a community college will be accepted and preference is given to candidates who complete the science prerequisites at a four year institution; (3) required courses, semester hours with laboratory required: 8 units each — one year's completed course — of general biology (zoology), inorganic chemistry, organic chemistry, physics; other courses: English composition (8 units or one year), philosophy, history or fine arts (8 units or one year). All prerequisite course work must be completed with a grade of "C" or better; (4) it is strongly suggested that students take additional upper division courses. Biochemistry, human or comparative anatomy, embryology, histology, genetics, physiology, psychology, sociology and economics are examples of recommended courses; (5) all students who apply for admission to the School of Dentistry are required to take the Dental Admission Test (DAT), given under the auspices of the Council on Dental Education of the American Dental Association. The Dental Admission Test must be taken no later than February 1 of the year for which formal application is made.

To expedite the admissions process, it is recommended that the DAT be taken during a testing period before filing formal application through the Associated American Dental Schools Application Service (AADSAS).

Test scores more than two years old will not be accepted. Applicants should check with the Dental Admissions Office. Full information about the test is sent to all applicants upon request, or can be obtained from the Division of Educational Measurements, Council on Dental Education, American Dental Association, 211 East Chicago Avenue, Chicago, IL 60611. No action can be taken on the application until DAT scores have been received.

(6) An interview at the School of Dentistry may be required of all applicants who appear qualified for consideration as determined by the Office of Admission and Student Affairs, although this interview may be waived for exceptionally qualified candidates as determined by the Dental Admissions Committee; a manual dexterity test may be required as part of an interview process; (7) complete transcripts of undergraduate and graduate work, including degree notations, must be on file in the Office of Admission and Student Affairs by July 15 prior to enrolling; (8) residency requirements: as a private institution, USC seeks a culturally and geographically diverse population. Therefore, out-of-state applicants are evaluated and selected based on the same criteria as California residents.

No applicant will be denied admission on the basis of race, religion, creed or disability. All admitted students must provide evidence that functional health is sufficient to meet professional demands, both in the student role and as an entry-level practitioner.

Application Procedure

(1) An application form should be obtained from the Associated American Dental Schools Application Service (AADSAS) by writing: AADSAS, 1625 Massachusetts Avenue, N.W., Suite 600, Washington, D.C. 20036-2212 or access the online version at adea.org or email: csraadsas@adea.org. (2) The AADSAS application form should be filled out and returned to AADSAS. USC requires that the application be received by AADSAS no

later than February 1 of the year in which enrollment is anticipated. Early application and file completion is recommended. Do not send the application form to USC directly. (3) Applicants are required to pay a nonrefundable \$85 processing fee, which should be forwarded directly to admissions (international students requiring a student visa must submit a \$145 processing fee). (4) Notification from the Office of Admissions and Student Affairs will be sent, indicating that the application has been received from AADSAS. (5) Candidates who are being seriously considered for acceptance will be sent an invitation for an interview and will be required to submit additional information. No interview can be granted unless the file is complete, including DAT scores. The interview may be waived for exceptional candidates as determined by the admissions committee. (6) Notification of acceptance will be sent by the Office of Admissions and Student Affairs sometime after December 1. (7) A non-refundable commitment fee of \$1,500 is required from students by the deadline indicated in their acceptance letter to hold a place in the entering class. A second commitment fee of \$1,500 is required by May 1. Applicants accepted after May 15 are required to pay a flat fee of \$3,000 within 15 days from the date of their acceptance letter to hold a place in the entering class; applicants accepted after July 1 are required to pay a \$3,000 commitment fee within two days. These non-refundable fees will be applied toward tuition upon enrollment. (8) Preregistration for the first year dental class is held before orientation. (9) All entering students are required to prepay \$3,000 toward the initial tuition by July 1. (10) As a precondition of enrollment, accepted students undergo a background screening and provide evidence of sound health and meet the school's health requirements.

Orientation

Students who have been accepted into the predoctoral dental program and who have reserved their place in the class will receive information on orientation during the first two weeks in July.

Orientation takes place prior to the first week of classes. The purpose of the orientation program is to acquaint incoming students with the school, its policies, programs, faculty and facilities. Incoming students receive financial counseling and receive their initial equipment issue during this orientation period.

Graduation Requirements

A student is eligible for the Doctor of Dental Surgery after successfully attaining the qualitative and quantitative level expected in the doctoral curriculum, specifically: has met the 2.0 GPA requirement for graduation; has no conditions existing at the termination of the final academic time unit that would qualify him or her for academic probation, clinical probation or academic disqualification; has no marks of "F," "IN" or "MG"; has passed Part I and Part II of the National Dental Board Examinations; has demonstrated the personal characteristics expected of a professional; has fulfilled his or her financial obligations as well as all other obligations and requirements for graduation.

In addition to meeting the academic requirements indicated above, students must have a completed administrative clearance form on file in the Office of Academic Affairs before a degree can be conferred. This

administrative clearance indicates that the student has met financial and other obligations to the university and to the student's patients.

Curriculum

The curriculum leading to the Doctor of Dental Surgery degree undergoes constant change to meet the challenges of modern dental practice. Course listings are current as of 2013-2014 and are subject to change without notice by action of the Ostrow School of Dentistry and the university.

Doctor of Dental Surgery — Learner-Centered Curriculum

REQUIRED COURSES		UNITS
DPBL 501abc	Dental Problem Based Learning — Human Structure I	3-3-3
DPBL 502abc	Dental Problem Based Learning — Human Function I	8-8-8
DPBL 503abc	Dental Problem Based Learning — Human Behavior I	2-2-2
DPBL 504abc	Dental Problem Based Learning — Human Clinical Dentistry I	4-4-4
DPBL 511abc	Dental Problem Based Learning — Human Structure II	2-2-2
DPBL 512abc	Dental Problem Based Learning — Human Function II	5-5-5
DPBL 513abc	Dental Problem Based Learning — Human Behavior II	3-3-2
DPBL 514abc	Dental Problem Based Learning — Human Clinical Dentistry II	7-7-8
DPBL 521abc	Dental Problem Based Learning — Human Structure III	1-1-1
DPBL 522abc	Dental Problem Based Learning — Human Function III	1-1-1
DPBL 523abc	Dental Problem Based Learning — Human Behavior III	1-1-1
DPBL 524abc	Dental Problem Based Learning — Human Clinical Dentistry III	14-14-14
DPBL 531ab	Dental Problem Based Learning — Human Structure IV	1-1
DPBL 532ab	Dental Problem Based Learning — Human Function IV	1-1
DPBL 533ab	Dental Problem Based Learning — Human Behavior IV	1-1
DPBL 534ab	Dental Problem Based Learning — Human Clinical Dentistry IV	13-13

For those individuals who are not familiar with the problem-based pedagogy which is an integrated curriculum, the content of the curriculum listed above is based on what was traditionally housed in the following courses.

Doctor of Dental Surgery — Traditional Program Curriculum

REQUIRED COURSES		UNITS
AMED 502	Emergency Medicine	2
AMED 523	Pharmacosedation II	1
AMED 524	Pain and Anxiety Control	2
ANAT 521	Head and Neck Anatomy	2
ANAT 522	Systemic Human Anatomy	3
ANAT 523	Head and Neck Dissection	1
CMDT 501	Introduction to Community Dentistry Programs	1
CMDT 502ab	Contemporary Dental Practice	2-2
CMDT 507abc	Ethical Issues in the Practice of Dentistry	0-0-1
CMDT 601	Mobile Clinic	1
DBIO 501	Biochemistry and Molecular Biology	2
DIAG 521	Principles of Oral Radiology	2
DIAG 522	Radiographic Techniques	1
DMAT 505	Dental Materials Update	1
DMAT 521ab	Dental Materials	2-2
DPHR 501	Pharmacology	3
ENDO 501	Clinical Endodontics	1
ENDO 502	Advanced Endodontics	1
ENDO 521	Preclinical Endodontics	3
ENDO 562abcd	Clinic: Concentrated Early Endodontics	0-0-0-1
ENDO 563ab	Clinic: Endodontic Therapy	0-2
FPRO 521	Preclinical Fixed Prosthodontics I	3
FPRO 522	Preclinical Fixed Prosthodontics II	3
FPRO 561abcd	Clinic: Fixed Prosthodontics I	0-0-0-3
FPRO 562ab	Clinic: Fixed Prosthodontics II	0-3
GSPD 504	Dental Treatment of the Geriatric and Special Patient	2
GSPD 562abc	Clinic: Geriatric Dentistry	0-0-1
GSPD 563abc	Clinic: Special Patient Care	0-0-1
HBHV 501	Behavioral Skills in Dentistry	1
HBHV 502	Interactional Skills	1
HBHV 504	Patient Education and Management	1
HBHV 550	Communications in Clinical Dentistry	1
HBHV 561abcde	Clinic: Behavioral Dentistry	0-0-0-0-1
INDD 501	Applied Growth and Development	1
INTB 504	Human Craniofacial Development and Genetics	3
INTB 521	Basic and Medical Microbiology	2
INTP 503ab	Evaluation of Scientific Information in Clinical Practice	0-1

INTR 503	Preclinical Diagnosis and Treatment Planning	2	RPRO 503ab	Preclinical Removable Prosthodontics and Implants	2-1
INTR 524abcdef	Clinical Practice	0-0-0-0-0-3	RPRO 510	Implant Dentistry	1
INTR 550ab	Introduction to Clinical Dentistry	0-1	RPRO 513	Removable Partial Prosthodontics	1
INTR 551abcde	Clinical Diagnosis and Treatment Planning	0-0-0-0-1	RPRO 523ab	Preclinical Removable Prosthodontics and Implants Laboratory	1-1
INTR 553abcdef	Clinic: Diagnosis and Treatment Planning	0-0-0-0-0-2	RPRO 550	Removable Complete Prosthodontics Clinic I	1
INTX 501abcdeh	Integrated Basic and Applied Science I	1-1-2-2-2-2-1	RPRO 561abcd	Clinic: Removable Complete Prosthodontics I	0-0-0-2
INTX 502abcdef	Integrated Basic and Applied Science II	1-1-2-3-1-2	RPRO 562ab	Clinic: Removable Complete Prosthodontics II	0-3
MBIO 501	Immunology	2	RPRO 571abcdef	Clinic: Removable Partial Prosthodontics	0-0-0-0-0-2
OCCL 502	Occlusion	1	SURG 501	Oral Surgery	2
OCCL 521ab	Dental Morphology and Function	3-2	SURG 562abc	Clinic: Oral Surgery I	0-0-1
OCCL 522	Occlusion Laboratory	1	SURG 563abc	Clinic: Oral Surgery II	0-0-1
OMOD 501	Emergency Dental Treatment	1	SURG 564abcd	Clinic: Hospital Oral Surgery	0-0-0-1
OMOD 502	Chronic Orofacial Pain	2			
OMOD 506	Infection Control	1			
OMOD 551abcd	Clinic: Physical Evaluation	0-0-0-1			
OMOD 562abcd	Clinic: Hospital Dentistry	0-0-0-1			
OMOD 563abcdef	Clinic: Emergency Dental Treatment	0-0-0-0-0-1			
OPER 521ab	Preclinical Operative Dentistry I	1-3			
OPER 522	Preclinical Operative Dentistry II	3			
OPER 561abcd	Clinic: Operative Dentistry I	0-0-0-6			
OPER 562ab	Clinic: Operative Dentistry II	0-6			
ORTH 501ab	Seminar: Orthodontics	0-1			
ORTH 521	Preclinical Orthodontics	2			
ORTH 561abcdef	Clinic: Orthodontic Therapy	0-0-0-0-0-2			
PEDO 501	Clinical Pediatric Dentistry	1			
PEDO 521	Preclinical Pediatric Dentistry	2			
PEDO 551abc	Clinic: Dentistry for Children I	0-0-2			
PEDO 561abc	Clinic: Dentistry for Children II	0-0-1			
PERI 502	Periodontal Diseases and Elements of Therapeutic Judgment	2			
PERI 504	Advanced Periodontics	1			
PERI 521	Periodontal Surgery	2			
PERI 550ab	Clinic: Introductory Periodontal Therapy	1-1			
PERI 561abcd	Clinic: Periodontal Therapy I	0-0-0-1			
PERI 562ab	Clinic: Periodontal Therapy II	0-2			
PTHL 501	Oral Pathology	4			
PTHL 504ab	Seminar: Oral Pathology	0-0			
REST 501	Preclinical Operative and Fixed Prosthodontics (Conjoint)	2			
REST 503ab	Clinical Restorative Dentistry	1-1			
REST 504	Diagnosis and Treatment Planning	1			
REST 521	Preclinical Operative/Fixed Prosthodontics Laboratory	3			
REST 522	Aesthetics in Dentistry	1			
RPRO 502	Removable Complete Prosthodontics	1			

Five units of selective courses are required in addition to the above.

Advanced Placement Doctoral Dental Degree

The Advanced Placement DDS program allows the outstanding student who has completed a Bachelor of Science in Dental Hygiene to waive several courses in order to complete the doctoral dental degree in 151 units rather than the 185 units for the regular program.

Admission Requirements

In addition to the entrance requirements to the Ostrow School of Dentistry, the following additional requirements must be met: (1) bachelor's degree from the USC dental hygiene program completed within five years of the projected date of entry into the doctoral dental program; (2) a minimum grade point average of 3.0 (A = 4.0) in the dental hygiene program and a minimum "C" grade in each of the courses waived; (3) two letters of recommendation from faculty in the dental hygiene program.

Degree Requirements

The student in the Advanced Placement DDS program must complete all the DDS required courses except for the following: DPBL 501ab, DPBL 502ab, DPBL 503ab and DPBL 504ab.

Six-Year Program

The School of Dentistry offers a six-year predoctoral dental program.

The main purposes of the Accelerated Dental Acceptance Program Track (ADAPT) are (1) to continue to attract high quality applicants to the Ostrow School of Dentistry of USC, (2) to encourage students interested in dentistry to take their predoctoral education at USC, and (3) to offer an opportunity for quality students to complete their education at an outstanding private university. Only students who are completing their senior year in high school are eligible to apply.

Application Procedures

(1) Complete and submit the USC undergraduate admissions application by the priority deadline of December

15. (2) Complete and submit the ADAPT application and essay to the Ostrow School of Dentistry of USC by February 1. (3) In addition, forward the following items directly to the School of Dentistry: (a) \$85 application fee, (b) 2" x 2" passport-style photograph, (c) two letters of recommendation from high school science teachers, (d) copies of SAT scores and high school transcripts, and copy of acceptance letter from USC.

For additional information and an application, contact: Ostrow School of Dentistry of USC, Office of Admission and Student Affairs, 925 W. 34th Street, Room 201, Los Angeles, CA 90089-0641, (213) 740-2841, email: uscsdadm@usc.edu or access the school's Website at dentistry.usc.edu.

Advanced Standing Program for International Dentists

This program is designed to teach qualified dentists from other countries the knowledge and skills available in the United States. Time necessary to complete the program depends upon the doctor's ability; a minimum of two years is usually required. About eight months will be devoted to fundamental, technical and academic procedures. The remaining time is devoted to clinical training as necessary to achieve graduation qualifications. Graduation from the Advanced Standing Program for International Dentists leads to a DDS degree but does not give automatic licensure to practice dentistry. However, graduates are eligible to take the State Board Dental Examinations in most of the United States. (A few states still require U.S. citizenship.)

Additional information may be requested from the Ostrow School of Dentistry of USC, Office of Admissions and Student Affairs, 925 W. 34th Street, Room 201, Los Angeles, CA 90089-0641, (213) 740-2841, email: uscsdadm@usc.edu or access the school's Website at dentistry.usc.edu.

Admission

Prospective students must apply to the Advanced Standing Program for International Dentists. Selected applicants will be interviewed and tested in October and accepted based on the following requirements: (1) completion of the formal application (before August 15 for admission to the program in April). A \$145 processing fee must accompany the application. (2) Successful completion of the National Board Part I examination of the American Dental Association (ADA). A score of 75 percent must be attained in each category. Higher scores are advantageous in evaluation of the candidate's academic level. (3) Applicants for the Advanced Standing Program for International Dentists must demonstrate English-language proficiency by submitting either Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) scores. Competitive applicants should submit an Internet Based TOEFL (iBT) score of 100, with no less than 20 on each section, or an IELTS score of 7, with at least 6 on each band. Official scores must be received directly from the testing service and dated no earlier than two years (24 months) prior to the start of the student's intended first term at USC. For TOEFL, the institution code for USC is 4852 (no department code is required). To submit IELTS scores, please choose USC from the list of available institutions. Additional information about

these exams can be found at ets.org for the TOEFL and at ielts.org for the IELTS. (4) A small group problem-based interview evaluation session with members of the School of Dentistry. (5) Two letters of recommendation from dental school faculty. (6) A brief but accurate account of clinical experience. (7) Personal statement. (8) Documentary proof of license to practice from a Ministry of Health or proper governing body. (9) Satisfactory completion of and competence in the following academic and artistic entrance examinations to be given to invited applicants in October: (a) fixed prosthodontics (practical); (b) operative dentistry (practical). In addition, a separate written examination may be administered. (10) Complete official documents (transcripts) of all college and university course work, including dental education in the original language accompanied by certified English translation when necessary. (11) Certification of dental degree. Candidates chosen will be those who demonstrate the best qualifications in all academic and practical skills. (12) Submit a 2x2 photo. (13) As a precondition of enrollment, accepted students must provide evidence of sound health and meet the school's health and background requirements. (14) Submit a course-by-course World Education Services evaluation.

Student Visas

The I-20 Student Visa is issued to the applicant only after complete admission and acceptance has been granted. Before the papers can be processed, the applicant must present a copy of the I-94 form (white sheet in the passport) and a notarized statement of financial support for tuition and expenses for one year (\$120,000) to the Advanced Standing Program for International Dentists. These materials must be submitted at the time of application. The International Admission Office will issue the I-20 visa upon receipt and approval of these documents.

Financial Assistance

The United States government requires all international applicants to provide proof of ability to pay tuition and living expenses before a formal letter of admission or the forms needed to obtain a visa will be issued.

International students are not eligible to participate in U.S. federal financial aid programs. Please contact

the Ostrow School of Dentistry of USC Office of Financial Aid to discuss other financing options at (213) 740-2841, uscstdfa@usc.edu or visit usc.edu/admission/fa/loans/private.html.

Curriculum

Each candidate for the DDS degree should complete the course of instruction in two years, however, some individuals may need more time. The first four to eight months will be spent in preclinical exercises to acquaint the student with the fundamental technical procedures used at USC. The balance will be used for clinical procedures related to diagnosis and treatment of patients.

Grade Point Average Standards

Since this is a short program and highly concentrated, a GPA of 2.0 (A = 4.0) must be maintained each trimester. Therefore, each applicant will be provisionally accepted. If a doctor is unable to maintain an average GPA of 2.0, he or she will be asked to resign.

Each trimester Advanced Standing Program for International Dentists students are evaluated by the student professional performance evaluation committee. From these meetings, recommendations are made regarding advancement, special programs and disqualification.

Graduation Requirements

In order to receive the Doctor of Dental Surgery (DDS) degree, students in the Advanced Standing Program for International Dentists must: (1) successfully complete all the required courses and clinical patient care assigned in trimesters VI, VII, VIII, IX, X and XI of the Problem Based Learning DDS curriculum; (2) pass Part I and Part II of the National Dental Board Examinations; and (3) achieve all of the competencies defined for the DDS curriculum and complete all required clinical performance evaluations. All assessments of progress to degree completion will be equivalent for all students seeking the DDS degree.

In addition to meeting the academic requirements indicated above, students must have a completed administrative clearance form on file in the Office of Academic Affairs before a degree can be conferred. This administrative clearance indicates that the student has

met financial and other obligations to the university and to the student's patients.

Advanced Standing Program for International Dentists Curriculum

REQUIRED COURSES		UNITS
DPBL 511C	Dental Problem Based Learning — Human Structure II	2
DPBL 512C	Dental Problem Based Learning — Human Function II	5
DPBL 513C	Dental Problem Based Learning — Human Behavior II	2
DPBL 514C	Dental Problem Based Learning — Human Clinical Dentistry II	8
DPBL 521abc	Dental Problem Based Learning — Human Structure III	1-1-1
DPBL 522abc	Dental Problem Based Learning — Human Function III	1-1-1
DPBL 523abc	Dental Problem Based Learning — Human Behavior III	1-1-1
DPBL 524abc	Dental Problem Based Learning — Human Clinical Dentistry III	14-14-14
DPBL 531ab	Dental Problem Based Learning — Human Structure IV	1-1
DPBL 532ab	Dental Problem Based Learning — Human Function IV	1-1
DPBL 533ab	Dental Problem Based Learning — Human Behavior IV	1-1
DPBL 534ab	Dental Problem Based Learning — Human Clinical Dentistry IV	13-13
		100

Advanced Programs in Dental Education

The Ostrow School of Dentistry offers advanced dental education programs in dental hygiene, general dentistry, endodontics, general practice residency, operative dentistry, orofacial pain, oral medicine, oral and maxillofacial surgery, pediatric dentistry, periodontology and prosthodontics, all leading to a certificate. The Ostrow School of Dentistry in conjunction with the Graduate School also offers combined programs in operative dentistry and craniofacial biology, in orthodontics and craniofacial biology, in pediatric dentistry and craniofacial biology, and in periodontology and craniofacial biology leading to a Master of Science degree and a certificate. In conjunction with the Keck School of Medicine, the Ostrow School of Dentistry offers a combined program leading to an M.D. degree and certificates in oral and maxillofacial surgery, orofacial pain, and oral medicine. The Ostrow School of Dentistry also offers

an online master's degree in orofacial pain and oral medicine and geriatric dentistry. In addition to clinical seminars and clinical experience, students take basic science courses with advanced students from other departments.

The certificate curriculum consists of a core of basic science subjects plus clinical seminars and clinical experience. Elective subjects may also be selected by the student with the approval of the program director.

The estimated lengths of programs are as follows:

- Dental Hygiene, 16 months
- Endodontics, 24 months
- General Dentistry, 12 months
- General Practice Residency, 12 months
- Operative Dentistry, 24 months
- Oral and Maxillofacial Surgery, 48 months
- Oral and Maxillofacial Surgery/M.D., 72 months

- Orofacial Pain, 24 months
- Oral Medicine, 24 months
- Orofacial Pain and Oral Medicine (online), 36 months
- Orthodontics, 36 months
- Pediatric Dentistry, 24 or 36 months
- Periodontology, 36 months
- Prosthodontics, 36 months

All programs will begin in June (date to be determined).

Admission Requirements

Applicants must hold the Doctor of Dental Surgery or Doctor of Medical Dentistry degree (or equivalent degree if educated overseas) and must present the appropriate degrees, approved transcripts and affidavits as prescribed by the Office of Dental Admissions and Student Affairs.

Admission Procedures

Prospective students should apply through the Postdoctoral Application Support Service (PASS) at adea.org/pass. Prospective students to the integrated M.D. degree/oral and maxillofacial surgery certificate program should apply through the American Medical College Application Service (AMCAS). For selection and admission to the periodontics/CBY, orthodontics/CBY, and pediatrics/CBY dentistry programs, applicants are required to take the Aptitude Section of the Graduate Record Examinations; a competitive score of 144 quantitative and 153 verbal is desired for pediatric dentistry. For selection and admission for orthodontics and periodontics/CBY, a competitive minimum score of 144 quantitative and 153 verbal is required. The last acceptable test is in September of the year preceding desired admission. For further information regarding the GRE, applicants may contact a university in their area or write to: USC Center for Testing and Assessment, University Park, Los Angeles, CA 90089-0052, or visit the GRE Website at gre.org.

The following material is also required to complete the application: (1) a PASS application and a \$85 processing fee (graduates of foreign dental schools or students requiring a visa must submit a \$145 processing fee). Applications and information for the PASS application are available at PASS, Suite 600, 1625 Massachusetts Avenue N.W., Washington, D.C. 20036-2212, or online at adea.org/pass; (2) applicants for General Dentistry, General Practice Residency, Orthodontic, Pediatric Dentistry and Oral Surgery programs must submit applicant agreement forms to the Postdoctoral Dental Matching Program. Information and forms can be obtained online at natmatch.com/dentres; (3) a 2" x 2" passport style photograph of the applicant; (4) one official copy of the applicant's dental school transcript with degree notation. Foreign transcripts and degree notations must be submitted with a certified English translation; (5) three letters of recommendation: (a) one from the program director or chairman of the specific graduate department applied to, or someone who is currently a pedodontist, orthodontist, etc.; (b) one from a full-time faculty member in the basic sciences; (c) a general character reference from applicant's superior in service, or an individual by whom he or she was employed; (6) board scores Part I and Part II for all programs with the exception of the operative dentistry certificate and operative dentistry/CBY programs; MCATs are required for the Integrated M.D. degree/oral maxillofacial surgery certificate. GRE scores are required for operative dentistry/CBY, orthodontics, periodontics/CBY and pediatric/CBY programs. International students are required to take GREs for the two-year certificate program. These requirements may be waived at the discretion of the program director; (7) a biographical statement; (8) applicants may be asked to be available for an interview. If one is necessary, applicants will be contacted by the director of the individual advanced program; (9) applicants will be required to pay a non-refundable \$1,500 tuition deposit upon notification of acceptance. (10) As a precondition to enrollment, accepted students must provide evidence of sound health and meet the school's health requirements.

Timetable for Applications

Applications for admission to advanced programs must be received as follows:

- Endodontics, Sept. 1
- Periodontology, Sept. 1
- Oral and Maxillofacial Surgery, Oct. 1
- Orofacial Pain, Oct. 1
- Oral Medicine, Oct. 1
- Orofacial Pain and Oral Medicine (online), Oct. 1
- Orthodontics, Oct. 1
- General Dentistry, Oct. 15
- General Practice Residency, Oct. 15
- Operative Dentistry, Nov. 1
- Pediatric Dentistry, Nov. 1
- Prosthodontics, Nov. 1

Completed applications and related information are reviewed first by the faculty of the department of interest. In selecting applicants for admission the faculty considers academic records and personal qualifications. Final approval for admission rests with the advanced education coordinating committee. Responsibility for advising the student after admission rests with the department chair.

Orientation

A departmental orientation session is usually held the first week of classes, beginning in late June. Incoming students are acquainted with the Ostrow School of Dentistry, its policies, procedures, faculty and facilities.

Student Issue — Advanced Programs

Dental units in the school's clinics are equipped with Midwest Company type tubing and couplers for low and high speed air hand pieces. Advanced students must provide their own adapters to fit the school's couplers unless the students' present hand pieces are already so modified. The Dental Bookstore will assist in such conversions, if necessary. The bookstore has some low speed air hand pieces available for purchase.

Students accepted into an advanced program should consult their program directors about needed equipment.

Advanced Endodontics

The advanced endodontics certificate program is a 24-month course of study. This program provides students with the background information and clinical experience necessary for a specialist in the practice of endodontics, and also offers activities in research and teacher-training for students interested in academic endodontics.

Students are prepared for certification examination by the American Board of Endodontists.

Emphasis is placed on the interaction of this specialty with other specialties and with general dentistry.

The program in endodontics is accredited by the Commission on Dental Accreditation, a specialized accrediting body recognized by the Council on Postsecondary Accreditation and the United States Department of Education.

Advanced Endodontics Curriculum

REQUIRED COURSES		UNITS
ADNT 701	Research Methodologies in Dentistry	2
ADNT 702	Physical Diagnosis	2
ADNT 704ab	Oral Biology	1-13 each
ADNT 710	Internship: Dental Education	1-5
AMED 750abc	Physical Evaluation and Anesthesia	2-2-1
ANAT 701	Advanced Head and Neck Anatomy	1
DHIS 701	Advanced Oral Histology	2
DMAT 701	Advanced Biomaterials	2
DPHR 701	Advanced Pharmacology	1
ENDO 521	Preclinical Endodontics	3
ENDO 701abcd	Seminar: Biological Basis of Endodontic Therapy	1-1-1-1
ENDO 702	Seminar: Advanced Clinical Endodontics	2
ENDO 703abcd	Seminar: Review of Endodontic Literature	1-1-1-1
ENDO 704ab	Seminar: Surgical Endodontics	2-2
ENDO 705ab	Seminar: Endodontic Case Presentation	4-4
ENDO 710	Seminar: Endodontic Practice Management	2
ENDO 711	Alternatives in Endodontics	4
ENDO 761abcdef	Clinic: Advanced Endodontics	1-9 each
ENDO 790	Directed Research: Endodontics	1-12
PTHL 601	Advanced Oral Pathology Seminar	2

Advanced Operative Dentistry

The advanced program in operative dentistry offers a 24-month, 143-unit course culminating in a Certificate in Operative Dentistry or a combined 36-month, 162-unit program leading to a Certificate in Operative Dentistry and Master of Science in Craniofacial Biology.

The objective of the program is to produce skilled dental professionals with in-depth knowledge, technical and scientific background to become cutting-edge clinicians, professors and researchers. The program is structured to provide proficiency in scientific methodology and clinical expertise in mastering the most advanced techniques in preventive, operative, digital (CAD/CAM), esthetic, and adhesive dentistry.

The curriculum provides a solid foundation and proficiency in diagnosis, prognosis, prevention, treatment, restoration, management of developmental defects and discoloration, and rehabilitation of severely damaged dentition using a myriad of restorative techniques customized for the patient needs. Strong emphasis will be placed on meeting the patient's biological, functional and esthetic wishes.

Research is an integral part of the program. A strong, clinically relevant and fundamental research component is provided for long-term evaluation of restorative techniques and materials. Residents must perform and complete original research projects. The program encourages the residents to present their research in

renowned scientific meetings and to submit for publication. The residents of the combined operative dentistry certificate/Master of Science in craniofacial biology are required to defend a master's thesis to fulfill the thesis requirements.

Additionally residents will gain teaching experience through assisting in the DDS teaching program. The experience gained in clinical dentistry, research and teaching will provide graduates the skills and the background needed to pursue academic careers.

Advanced Operative Dentistry Certificate (143 units)

REQUIRED COURSES		UNITS
ADNT 702	Physical Diagnosis	2
ADNT 704ab	Oral Biology	1-13 each
ADNT 710	Internship: Dental Education	1-5
AMED 750abc	Physical Evaluation and Anesthesia	2-2-1
ANAT 701	Advanced Head and Neck Anatomy	1
CBY 574	Statistical Methods in Bioexperimentation	3
CBY 579L	Craniofacial Molecular Genetics	4
CBY 585	Systematic Research Writing	3
CBY 590	Directed Research	1-12
DHIS 701	Advanced Oral Histology	2
DMAT 701	Advanced Biomaterials	2
DPHR 701	Advanced Pharmacology	1
OPER 701ab	Seminar: Advanced Operative Dentistry I	2-2
OPER 702abL	Advanced Dental Morphology for Esthetic Restoration	3-3
OPER 705L	Dental Photography	1
OPER 710abcde	Seminar: Advanced Operative Dentistry II	1 each
OPER 720abcdef	Seminar: Advanced Operative Dentistry III	1 each
OPER 730abc	Seminar: Advanced Operative Dentistry IV	1 each
OPER 740abc	Seminar: Advanced Operative Dentistry V	2 each
OPER 750abc	Seminar: Advanced Operative Dentistry VI	2 each
OPER 760abcde	Seminar: Advanced Operative Dentistry VII	1 each
OPER 765abc	Seminar: Advanced Operative Dentistry VIII	1 each
OPER 770abcdefL	Scientific Investigation in Operative Dentistry	1-3, max 14
OPER 780abc	Treatment Planning in Operative Dentistry	2 each
OPER 795abcdef	Clinic: Advanced Operative Dentistry	1-3, max 14
REST 708ab	Dental Ceramics, Color, and Aesthetics	2-2
REST 710a	Implant Dentistry	1
REST 721ab	Principles of Occlusion	2-2

Advanced Operative Dentistry Certificate/M.S., Craniofacial Biology (162 units)

REQUIRED COURSES		UNITS
ADNT 702	Physical Diagnosis	2
ADNT 704ab	Oral Biology	1-13 each
ADNT 710	Internship: Dental Education	1-5
AMED 750abc	Physical Evaluation and Anesthesia	2-2-1
ANAT 701	Advanced Head and Neck Anatomy	1
CBY 574	Statistical Methods in Bioexperimentation	3
CBY 579L	Craniofacial Molecular Genetics	4
CBY 585	Systematic Research Writing	3
CBY 590	Directed Research	1-12
CBY 594ab	Master's Thesis	2-2
CBY 671	Epistemology and Ethos of Bioscience	2
DPHR 701	Advanced Pharmacology	1
DHIS 701	Advanced Oral Histology	2
DMAT 701	Advanced Biomaterials	2
OPER 701ab	Seminar: Advanced Operative Dentistry I	2-2
OPER 702abL	Advanced Dental Morphology for Esthetic Restoration	3-3
OPER 705L	Dental Photography	1
OPER 710abcdeff	Seminar: Advanced Operative Dentistry II	1 each
OPER 720abcdeff	Seminar: Advanced Operative Dentistry III	1 each
OPER 730abcde	Seminar: Advanced Operative Dentistry IV	1 each
OPER 740abc	Seminar: Advanced Operative Dentistry V	2 each
OPER 750abc	Seminar: Advanced Operative Dentistry VI	2 each
OPER 760abcdeff	Seminar: Advanced Operative Dentistry VII	1 each
OPER 765abcde	Seminar: Advanced Operative Dentistry VIII	1 each
OPER 770abcdeffL	Scientific Investigation in Operative Dentistry	1-3, max 14
OPER 780abcdeff	Treatment Planning in Operative Dentistry	2 each
OPER 795abcdeffhij	Clinic: Advanced Operative Dentistry	1-3, max 14
REST 708ab	Dental Ceramics, Color, and Aesthetics	2-2
REST 710a	Implant Dentistry	1
REST 721ab	Principles of Occlusion	2-2

Advanced Oral and Maxillofacial Surgery

The advanced education program in oral and maxillofacial surgery is a continuous 48-month course of study that prepares the graduate for the practice of oral and maxillofacial surgery. The program in oral surgery is accredited by the Commission on Dental Accreditation, a specialized accrediting body recognized by the Council on Postsecondary Accreditation and the United

States Department of Education. The program also meets the requirements of the American Association of Oral and Maxillofacial Surgeons.

The program is conducted at the Ostrow School of Dentistry and at the LAC+USC Medical Center. The course provides graduates with the necessary background for certification by the American Board of Oral and Maxillofacial Surgery. Certificates are awarded upon successful completion of the 48-month course.

Advanced Oral and Maxillofacial Surgery Curriculum

REQUIRED COURSES		UNITS
ADNT 702	Physical Diagnosis	2
ADNT 704C	Oral Biology	1
ADNT 710	Internship: Dental Education	1-5
PTHL 601	Advanced Oral Pathology Seminar	2
PTHL 701	Clinicopathologic Conference	3-12
SURG 701ab	Seminar: Advanced Oral Surgery	2-2
SURG 702ab	Seminar: Review of the Oral Surgery Literature	2-2
SURG 708ab	Orthognathic Surgery	2-2
SURG 761abcd	Clinic: Advanced Oral Surgery	1-10 each
SURG 763abcd	Clinic: Advanced Hospital Oral Surgery and Anesthesia	1-10 each

Integrated M.D. Degree/Oral and Maxillofacial Surgery Certificate Program

The Ostrow School of Dentistry of USC and the Keck School of Medicine of USC offer a continuous 72-month integrated course of study leading to a medical degree in addition to a certificate in oral and maxillofacial surgery that prepares the graduate for the practice of oral and maxillofacial surgery. The program is fully integrated and will include advanced placement into the established medical school curriculum.

During the first three years, the student will function in the capacity of a medical student as well as a resident in the oral and maxillofacial surgery program. After the completion of the medical school curriculum, the M.D. degree will be awarded. This is required before the student can continue in the specially designed surgical internship portion of the program. At the completion of the surgical internship, the student is qualified for medical licensure. During the fourth through sixth year, all required rotations and surgical training will be completed to fulfill the educational requirements of the Commission of Dental Accreditation of the American Dental Association and the American Association of Oral and Maxillofacial Surgeons.

The program is conducted at the Schools of Dentistry and Medicine and at the LAC+USC Medical Center. The course of study provides the graduates with the necessary background for certification by the American Board of Oral and Maxillofacial Surgery. The oral and maxillofacial surgery certificates are awarded upon successful completion of the entire 72-month course.

Advanced Oral Medicine

The Ostrow School of Dentistry's 24-month, certificate residency program in advanced oral medicine trains one to two residents per year to be expert clinicians in oral medicine with an emphasis on orofacial pain. The program is fully accredited by the Commission on Dental Accreditation (CODA) of the American Dental Association (ADA). The certificate curriculum is designed with a series of didactic courses where students will gain knowledge about the diagnosis, pathobiology and treatment of different oral diseases in the field of oral medicine. The field of oral medicine is concerned with the diagnosis and treatment of oral mucosal diseases and infections, burning mouth, immunopathologic diseases, neoplastic diseases, osseous diseases including bisphosphonate osteonecrosis, salivary gland disorders and dysfunction, pharmacologic-related and systemic disorders that cause oral disease. The courses and clinical experiences covered in the intensive two-year program are listed below.

REQUIRED COURSES		UNITS
ADNT 701	Research Methodologies in Dentistry	2
OFPM 701	CPR, Blood and Airborne Infections and Common Emergencies for Dental Residents	1
OFPM 702ab	Soft Tissue Disease for Dental Residents	1, 2
OFPM 703	Local Anesthesia, Minor Surgery, and Biopsy Procedures for Dental Residents	1
OFPM 704	Bony Pathology, Radiology, and Advanced Imaging for Dental Residents	1
OFPM 705	Neurogenic-based Oral and Facial Pains for Dental Residents	2
OFPM 706	TMD, Orthopedics, Rheumatology and Physical Therapy for Dental Residents	2
OFPM 707	Pharmacology Series for Dental Residents	2
OFPM 721	Neurosciences for Dental Residents	2
OFPM 722	Internal Medicine and Systemic Disease for Dental Residents	2
OFPM 723	Systems Physiology, Motor Disorders, and Sleep Apnea for Dental Residents	2
OFPM 724	Psychological and Psychometric Assessment for Dental Residents	2
OFPM 725	Epidemiology, Nutrition, and Aging for Dental Residents	2
OFPM 726	Immunology and Immunosuppression for Dental Residents	2
OFPM 727	Infectious Disease, Oral Microbiology, and Virology for Dental Residents	2
OFPM 728	Case Presentations by OFP-OM Residents	2

Advanced Orofacial Pain

The Ostrow School of Dentistry's 24-month, certificate residency program in advanced orofacial pain trains one to two residents per year to be expert clinicians in orofacial pain with an emphasis on oral medicine. The program has received initial accreditation from the Commission on Dental Accreditation (CODA) of the American Dental Association (ADA). The certificate curriculum is designed with a series of didactic courses where students will gain knowledge about the diagnosis, pathobiology and treatment of different oral diseases in the field of orofacial pain. The field of orofacial pain encompasses masticatory musculoskeletal pain, neurogenic orofacial pain, sleep disorders related to orofacial pain, temporomandibular disorders, headaches, orofacial motor disorders including orofacial dystonias and bruxism, intraoral, intracranial, extracranial and systemic disorders that cause orofacial pain. The courses and clinical experiences covered in the intensive two-year program are listed below.

REQUIRED COURSES		UNITS
ADNT 701	Research Methodologies in Dentistry	2
OFPM 701	CPR, Blood and Airborne Infections and Common Emergencies for Dental Residents	1
OFPM 702ab	Soft Tissue Disease for Dental Residents	1, 2
OFPM 704	Bony Pathology, Radiology, and Advanced Imaging for Dental Residents	1
OFPM 705	Neurogenic-Based Oral and Facial Pains for Dental Residents	2
OFPM 706	TMD, Orthopedics, Rheumatology and Physical Therapy for Dental Residents	2
OFPM 707	Pharmacology Series for Dental Residents	2
OFPM 709	Headaches for Dental Residents	1
OFPM 721	Neurosciences for Dental Residents	2
OFPM 722	Internal Medicine and Systemic Disease for Dental Residents	2
OFPM 723	Systems Physiology, Motor Disorders, and Sleep Apnea for Dental Residents	2
OFPM 724	Psychological and Psychometric Assessment for Dental Residents	2
OFPM 725	Epidemiology, Nutrition, and Aging for Dental Residents	2
OFPM 726	Immunology and Immunosuppression for Dental Residents	2
OFPM 727	Infectious Disease, Oral Microbiology, and Virology for Dental Residents	2
OFPM 728	Case Presentations by OFP-OM Residents	2

Advanced Orofacial Pain and Oral Medicine

Master of Science, Advanced Orofacial Pain and Oral Medicine

The Master of Science degree in orofacial pain and oral medicine program consists of a 36-month hybrid program (online and face-to-face) leading to a master's degree in orofacial pain and oral medicine (OFPOM). The curriculum is designed to provide practicing dentists with advanced knowledge and training in the areas of orofacial pain and oral medicine including sleep medicine.

The program consists of a series of 14 online didactic courses where the students will gain knowledge about the underlying science as well as the diagnosis, pathobiology and treatment of different oral and maxillofacial diseases and disorders. In addition to these courses, the student will attend USC for two weeks each summer during the three-year period for an additional three face-to-face assessment courses where they will be tested for knowledge acquisition using a set of objective standardized clinical examinations, oral interviews and written examinations. They will also be required to prepare a final portfolio of cases and conduct and present a research project report. During their visits to USC, the residents will gain experience diagnosing and treating patients in the USC OFOPM center.

During the year, the residents will attend weekly video conferences where online students are required to analyze, diagnose and prepare treatment plan cases that are posted for analysis. These cases will cover the following diseases: temporomandibular disorders; infectious, dysplastic, neoplastic proliferative, erosive and ulcerative oral and pharyngeal mucosal diseases. Students will also learn about and work with patients who have various salivary, neurogenic, osseous, and odontogenic infections, tumors and diseases including oral neuropathic pain, oral spasticity, migraine, tension type and chronic daily headache and sleep apnea disorders.

REQUIRED COURSES		UNITS
ADNT 701	Research Methodologies in Dentistry	2
OFPM 702ab	Soft Tissue Disease for Dental Residents	1, 2
OFPM 704	Bony Pathology, Radiology and Advanced Imaging for Dental Residents	1
OFPM 705	Neurogenic Based Oral and Facial Pains for Dental Residents	2
OFPM 706	TMD, Orthopedics, Rheumatology and Physical Therapy for Dental Residents	2
OFPM 707	Pharmacology Series for Dental Residents	2
OFPM 710ab	Knowledge Assessment for OFPOM Residents	1, 1
OFPM 721	Neurosciences for Dental Residents	2
OFPM 722	Internal Medicine and Systemic Disease for Dental Residents	2

OFPM 723	Systems Physiology, Motor Disorders and Sleep Apnea for Dental Residents	2
OFPM 724	Psychological and Psychometric Assessment for Dental Residents	2
OFPM 725	Epidemiology, Nutrition and Aging for Dental Residents	2
OFPM 726	Immunology and Immunosuppression for Dental Residents	2
OFPM 727	Infectious Disease, Oral Microbiology and Virology for Dental Residents	2
OFPM 729abcd	Capstone Project for OFPOM Residents	0.5 each
OFPM 730abcde	Case Portfolio Preparation by Online OFPOM Residents	0.5 each
Total		32.5

Advanced Orthodontics

The advanced orthodontics certificate program is a 34-month course of study leading to a certificate in orthodontics and a Master of Science degree in craniofacial biology. The program in orthodontics is accredited by the Commission on Dental Accreditation of the American Dental Association, a specialized accrediting body recognized by the Council on Postsecondary Accreditation and the United States Department of Education. Upon completion of all requirements, the graduate is eligible for examination and certification by the American Board of Orthodontics.

The program has as its primary mission the preparation and training of residents for clinical practice in the specialty of orthodontics. This is achieved through a broad, in-depth curriculum designed to develop proficiency in clinical orthodontics with a solid foundation in fundamental and advanced biological and mechanical principles. Graduate-level courses in the basic sciences are the core didactic component of the program. Research is also an integral part of the program, and each resident must complete an original research project to fulfill a thesis requirement.

Advanced Orthodontics/Craniofacial Biology Curriculum

REQUIRED COURSES	UNITS
ADNT 710	Internship: Dental Education 1-5
CBY 574	Statistical Methods in Bioexperimentation 3
CBY 578	Pathological Conditions of the Craniofacial Complex 3
CBY 579L	Craniofacial Molecular Genetics 4
CBY 585	Systematic Research Writing 3
CBY 590	Directed Research 3
CBY 594abz*	Master's Thesis 2-2-0
CBY 671	Epistemology and Ethos of Bioscience 2
ORTH 701ab	Cephalometrics: Growth and Development 2-4 each

ORTH 702	Seminar: Review of Orthodontic Literature	5
ORTH 703abcdehfi	Seminar: Advanced Orthodontics	2-8 each
ORTH 704abc**	Seminar: Orthodontics in Theory and Practice	2-2-2
ORTH 705abc	Orthodontic Practice Management	2-2-2
ORTH 706	Surgical Orthodontics	2
ORTH 707	Interdisciplinary Aesthetic Treatment	2
ORTH 708	Information Technology in Orthodontic Practice	2
ORTH 709	Advanced Information Technology in Orthodontic Practice	2
ORTH 721	Biomechanics and Orthodontic Technic	8
ORTH 751abcdehfi	Clinic: Advanced Orthodontics	1-10 each
PERI 752	Interdisciplinary Treatment: An Orthodontic Perspective	2

*Students will be re-enrolled in CBY 594z until completion of the thesis. Tuition will be charged in each trimester of enrollment beyond Summer Session II.

**Elective course

Advanced Pediatric Dentistry

The advanced pediatric dentistry certificate program is a 24-month course of study designed to provide students with the background information and clinical experience necessary for the practice of pediatric dentistry. The program in pediatric dentistry is accredited by the Commission on Dental Accreditation, a specialized accrediting body recognized by the Council on Postsecondary Accreditation and the United States Department of Education. The program also meets the educational requirements of the American Board of Pediatric Dentistry.

First-year studies emphasize advanced pediatric dentistry theory and clinical treatment of the "healthy" child. Students develop a sound basis in genetics, growth and development, nonpharmacologic and pharmacologic behavior management, physical evaluation, research methodology, statistics, interceptive orthodontics, prevention and a review of pediatric dental literature. Second year studies concentrate on dental care of children with physical, medical, intellectual and emotional disabilities. The second year student serves as a hospital-based resident at Childrens Hospital Los Angeles, Long Beach Memorial Medical Center or Children's Hospital of Orange County. Residents also rotate to Rancho Los Amigos National Rehabilitation Center. Students gain experience in performing operating room procedures, oral conscious sedation, participating on interdisciplinary teams, providing emergency treatment and treating children with medical disabilities and pathologies in the hospital environment.

In addition to the two-year program, opportunities are available to combine the basic certificate program with a master's or doctoral degree in Craniofacial Biology (CBY).

The purpose of the combined pediatric dentistry/craniofacial biology program is to prepare highly qualified specialists in pediatric dentistry who can assume leadership positions in dental education, service to the community, dental research and dental care of children with developmental disabilities and medically compromising conditions. The structured curriculum of this three-year program offers a strong didactic component in basic biological science and in clinical sciences as well as intensive clinical pediatric dentistry training.

An individual who elects to apply to the combined program in craniofacial biology and advanced pediatric dentistry would submit a simultaneous application to the Ostrow School of Dentistry and the Graduate School. See the Craniofacial Biology section of this catalogue for further information. The first year of the program would be spent in craniofacial biology and the second and third years spent in the pediatric dentistry program. After successful completion of the craniofacial biology program the student would be reviewed by the Pediatric Dentistry Admissions Committee and admitted into the certificate program. The student must satisfactorily complete the Master of Science program to be eligible for the Pediatric Dentistry Certificate.

Advanced Pediatric Dentistry Certificate

REQUIRED COURSES	UNITS
ADNT 701	Research Methodologies in Dentistry 2
ADNT 706	Seminar: Diseases of Childhood 2
ADNT 707	Behavior of the Child Patient 2
ADNT 710	Internship: Dental Education 1-5
AMED 750abc	Physical Evaluation and Anesthesia 2-2-1
DMAT 701	Advanced Biomaterials 2
DPHR 701	Advanced Pharmacology 1
PEDO 701ab	Seminar: Advanced Pediatric Dentistry 8-15 each
PEDO 702ab	Comprehensive Review of Pediatric Dentistry 5-7 each
PEDO 703abcde	Interceptive Orthodontics 2-5 each
PEDO 704ab	Prevention in Pediatric Dentistry 2-2
PEDO 705	Pediatric Diseases 2
PEDO 706	Dental Care for Pediatric Patients with Disabilities 2
PEDO 707	Seminar: Cleft Palate Rehabilitation 1-9
PEDO 708	Practice Management 1
PEDO 709	Conscious Sedation in Pediatric Dentistry 1
PEDO 721	Pediatric Physical Evaluation 2
PEDO 761abcde*	Clinic: Advanced Pediatric Dentistry 2-10 each
PEDO 771abcde*	Clinic: Hospital Pediatric Dentistry 2-15 each
PEDO 772abcde	Clinic: Interceptive Orthodontics 1-3 each
PEDO 773	Hospital Pediatric Clinics 2-4
PEDO 774	Clinical Genetics in Pediatric Dentistry 9

PEDO 790ab Directed Research: 1-6 each
 Pediatric Dentistry
**In addition to the required courses, a combined minimum of 36 units of PEDO 761 and PEDO 771 must be satisfactorily completed, as directed by the program director.*

Advanced Periodontology

The advanced periodontology program offers two options: (1) a 36-month, 183-unit course of study leading to a certificate in periodontology, or (2) a dual 36-month, 183-unit program leading to both a certificate and a Master of Science in Craniofacial Biology. The program in periodontology is accredited by the Commission on Dental Accreditation, a specialized accrediting body recognized by the Council on Postsecondary Accreditation, and the United States Department of Education. The program also meets the educational requirements of the American Board of Periodontology. Preparation for the certification process is an integral part of the curriculum, and all graduates are expected to become diplomates.

The curriculum provides a sound foundation in those basic sciences and medical subjects which apply directly to clinical periodontics. Emphasis is placed on the interaction of periodontics with other specialties and general dentistry. The central theme of the curriculum is that periodontology is the scientific basis to all of clinical dentistry.

The program is structured to produce skilled periodontists with the technical and scientific abilities to provide periodontal services to the community and to prepare students for teaching careers. This program also provides a portion of the requirements necessary for an advanced degree in a basic science.

A core oral biology curriculum combined with fundamentals of physical diagnosis, anatomy, pathology, microbiology, research interpretation and design, and pharmacology constitute the biological foundation upon which the advanced postdoctoral student builds his or her skills. The program provides knowledge and clinical expertise in all types of periodontal treatment required for the practice of oral health care including the placement and care of dental implants. Clinical experience in pharmacosedation and treatment of special care patients is available for those who are interested in these fields.

The program faculty believe that graduates should be dedicated to the concept of being a continuous student and should contribute to periodontics and to dentistry by practice, education, publication and/or research.

Advanced Periodontology Certificate (183 units)

REQUIRED COURSES		UNITS
ADNT 702	Physical Diagnosis	2
ADNT 703a-f, h-j	Seminar: Combined Treatment Planning	2 each
ADNT 704ab	Oral Biology	1-13 each
ADNT 710	Internship: Dental Education	1-5
AMED 750abc	Physical Evaluation and Anesthesia	2-2-1

ANAT 701	Advanced Head and Neck Anatomy	1
CBY 574	Statistical Methods in Bioexperimentation	3
CBY 575	Biologic Basis of Oral-Facial Disease	3
CBY 576	Biochemical Aspects of Periodontal Disease	3
CBY 585	Systematic Research Writing	3
CBY 590	Directed Research	6
CBY 674	Advanced Oral Microbiology	2
DHIS 701	Advanced Oral Histology	2
DPHR 701	Advanced Pharmacology	1
PERI 701ab	Seminar: Review of Current Periodontal Literature	2-3
PERI 702ab	Seminar: Periodontal Treatment Procedures	2-2
PERI 704a-f, h-j	Seminar: Periodontal Therapy	2 each
PERI 708	Seminar: Clinical Basis of Periodontics	4
PERI 710	Clinical Periodontal Photography	1
PERI 711	Occlusal Therapy in Periodontics	2
PERI 713a-f, h-j	Treatment Planning in Periodontics	2 each
PERI 716ab	Seminar: Special Topics in Periodontal Disease	3-3
PERI 750	Advanced Periodontal Instrumentation	3
PERI 752	Interdisciplinary Treatment: An Orthodontic Perspective	2
PERI 761a-f, h-j	Clinic: Advanced Periodontics	1-10 each
PTHL 601	Advanced Oral Pathology Seminar	2
REST 710abcd	Implant Dentistry	1-1-1-1
REST 782a-e	Clinic: Implant Prosthodontics	1-10 each

Advanced Periodontology Certificate/M.S., Craniofacial Biology (183 units)

REQUIRED COURSES		UNITS
ADNT 702	Physical Diagnosis	2
ADNT 703a-f, h-j	Seminar: Combined Treatment Planning	2 each
ADNT 704ab	Oral Biology	1-13 each
ADNT 710	Internship: Dental Education	1-5
AMED 750abc	Physical Evaluation and Anesthesia	2-2-1
ANAT 701	Advanced Head and Neck Anatomy	1
CBY 574	Statistical Methods in Bioexperimentation	3
CBY 575	Biologic Basis of Oral-Facial Disease	3
CBY 576	Biochemical Aspects of Periodontal Disease	3
CBY 579L	Craniofacial Molecular Genetics	4
CBY 582L	Laboratory Methods	3
CBY 585	Systematic Research Writing	3
CBY 590	Directed Research	6

CBY 594ab	Master's Thesis	2-2
CBY 671	Epistemology and Ethos of Bioscience	2
CBY 674	Advanced Oral Microbiology	2
DHIS 701	Advanced Oral Histology	2
DPHR 701	Advanced Pharmacology	1
PERI 701ab	Seminar: Review of Current Periodontal Literature	2-3
PERI 702ab	Seminar: Periodontal Treatment Procedures	2-2
PERI 704a-f, h-j	Seminar: Periodontal Therapy	2 each
PERI 708	Seminar: Clinical Basis of Periodontics	4
PERI 710	Clinical Periodontal Photography	1
PERI 711	Occlusal Therapy in Periodontics	2
PERI 713a-f, h-j	Treatment Planning in Periodontics	2 each
PERI 716ab	Seminar: Special Topics in Periodontal Disease	3-3
PERI 750	Advanced Periodontal Instrumentation	3
PERI 752	Interdisciplinary Treatment: An Orthodontic Perspective	2
PERI 761a-f, h-j	Clinic: Advanced Periodontics	1-10 each
PTHL 601	Advanced Oral Pathology Seminar	2
REST 710abcd	Implant Dentistry	1-1-1-1
REST 782a-e	Clinic: Implant Prosthodontics	1-10 each

Advanced Prosthodontics

The program in advanced prosthodontics is a 36-month course of study designed to teach didactic and clinical skills leading to competency in the specialized practice of prosthodontics. The program provides a basic science foundation, incorporating studies in physical diagnosis, anatomy, oral pathology, pharmacology and oral biology. Proficiency in fixed, removable and implant prosthodontics will be developed during the course of study from a practical and didactic aspect. There is a strong emphasis on applying principles of esthetics toward oral reconstructions and implant prosthodontics. Periodontally compromised patients are frequently encountered, so the program is closely allied with the advanced program in periodontology. Treatment planning and integrated care with allied specialties is a strength of the program.

In addition to developing clinical skills, the program requires a research methodology course and a research project.

Clinical experience in implant placement and didactic study in maxillofacial prosthetics are offered: students who want more experience in clinical care may devote more time to treating these patients. The program in advanced prosthodontics is accredited by the Commission on Dental Accreditation, a special accrediting body recognized by the Council on Postsecondary Accreditation and the United States Department of Education. The program also meets the requirements

of the American Board of Prosthodontics. A certificate is awarded upon successful completion of the program.

Advanced Prosthodontics Certificate

REQUIRED COURSES		UNITS
ADNT 701	Research Methodologies in Dentistry	2
ADNT 702	Physical Diagnosis	2
ADNT 703abcdehfi	Seminar: Combined Treatment Planning	2 each
ADNT 704ab	Oral Biology	1-13 each
AMED 75oabc	Physical Evaluation and Anesthesia	2-2-1
ANAT 701	Advanced Head and Neck Anatomy	1
CBY 575	Biologic Basis of Oral-Facial Disease	3
DMAT 701	Advanced Biomaterials	2
DPHR 701	Advanced Pharmacology	1
PTHL 601	Advanced Oral Pathology Seminar	2
REST 701	Orientation to Advanced Prosthodontics	5
REST 702abcdehfi	Seminar: Treatment Planning	2 each
REST 703abcdehfi	Seminar: Review of the Prosthodontic Literature — Fixed	1 each
REST 704abcdehfi	Seminar: Review of the Prosthodontic Literature — Removable	1 each
REST 705	Advanced Fixed Prosthodontics Techniques	1

REST 706	Advanced Complete Denture Techniques	1
REST 708ab	Dental Ceramics, Color, and Aesthetics	2-2
REST 709ab	Seminar: Removable Partial Dentures	1-2
REST 710ab	Implant Dentistry	1-1
REST 712	Maxillofacial Prosthodontics	2
REST 721ab	Principles of Occlusion	2-2
REST 761abcdehij	Clinic: Advanced Prosthodontics	1-10 each
REST 781	Clinic: Maxillofacial Prosthetics	1-8
REST 782abc	Clinic: Implant Prosthodontics	1-10 each
REST 790	Directed Research: Prosthodontics	1-12

General Practice Residency

The general practice residency program is a 12-month, full-time residency program designed in conformance with the guidelines of the Council on Dental Education and the Commission on Dental Accreditation of the American Dental Association. The program is structured to increase diagnostic acumen, general knowledge and clinical ability in dentistry.

The program is conducted primarily at the Los Angeles County-USC Medical Center, one of the nation's largest teaching hospitals, and at the Veterans Administration Los Angeles Ambulatory Care facility in downtown Los Angeles. Some of the training is also conducted at Rancho Los Amigos Medical Center, West L.A.

Veterans Administration Hospital, the Ostrow School of Dentistry of USC and other community facilities.

Under supervision of the faculties of the Ostrow School of Dentistry of USC, the Greater Los Angeles V.A. and the Keck School of Medicine of USC, the residents rotate through oral surgery, emergency medicine, anesthesia, operating room dentistry, care for the handicapped and other disciplines. Approximately 80 percent of the resident's time is devoted to delivery of oral health care and its management to the medically compromised patient.

The program emphasizes the treatment of a wide range of oral health disorders, medical considerations related to dental care, the ability to treat medically compromised and handicapped patients and teaches how to provide dental care in a hospital environment interacting with health care providers of various disciplines. Inherent in the year of training, a philosophy of practice addresses the medical psychosocial and oral health care needs of the patient.

Along with patient treatment, the residents are required to take courses in physical evaluation and anesthesia, endodontics, periodontics, dental implants, dental technology, maxillofacial prosthodontics, oral pathology and practice management. The residents are also required to present patient cases to the faculty.

Residents receive a monthly stipend during their training program and are granted a certificate upon satisfactory completion of the program.

The program in general practice is accredited by the Commission on Dental Accreditation, a specialized accrediting body recognized by the Council on Postsecondary Accreditation and the United States Department of Education.

Graduate Degrees

Craniofacial Biology

Ostrow School of Dentistry of USC

DEN 218

(213) 740-1001

(323) 442-1728

FAX: (213) 740-2376

Email: paine@usc.edu

Director: Michael L. Paine, BDS, Ph.D.

Faculty

Professors: Yang Chai, DDS, Ph.D.; Casey Chen, DDS, Ph.D.; Cheng-Ming Chuong, M.D., Ph.D. (*Medicine*); Glenn Clark, DDS, Ph.D.; Paul Denny, Ph.D.; Tina Jaskoll, Ph.D.; Michael Melnick, DDS, Ph.D.; Cedric Minkin, Ph.D.; Mahvash Navazesh, DMD; Janet Moradian-Oldak, Ph.D.; Michael Paine, BDS, Ph.D.; Pragna Patel, Ph.D.; Michael Schneir, Ph.D.; Songtao Shi, DDS, Ph.D.; Harold C. Slavkin, DDS; Jorgen Slots, DDS, Ph.D.; Malcolm Snead, DDS, Ph.D.; David Warburton, M.D. (*Medicine*)

Associate Professors: Winston Chee, DDS; George Cho, DDS; Roger De Filippo, M.D. (*Medicine*); Robert Keim, DDS, Ph.D.; Saravanan Ram, DDS; Glenn Sameshima, DDS, Ph.D.; Arnold Tiber, DDS, Ph.D.; Stephen Yen, DMD, Ph.D.; Homayoun Zadeh, DDS, Ph.D.

Assistant Professors: Ruchi Bajpai, M.S., Ph.D.; Reyes Enciso, Ph.D.; Mark Frey, Ph.D. (*Medicine*); Matt Lee, M.D.; Ching-Ling Lien, Ph.D., (*Medicine*); Amy Merrill-Brugger, Ph.D.; Laura Perin, Ph.D., (*Medicine*); Parish P. Sedghizadeh, M.S., DDS; Wei Shi, M.D., Ph.D. (*Medicine*); Mark Urata, M.D., DDS; Yan Zhou, Ph.D.

Craniofacial biology is concerned with the evolution, growth, structure and function of oral tissues and the oral region; and with the etiology and pathogenesis of numerous diseases and malformations. These involve studies at various levels of biological organization, from the molecular and subcellular to the organismic. Craniofacial biology comprises a large, rapidly increasing body of knowledge that has both clinical and academic importance.

The objective of the program is primarily, but not exclusively, to prepare health science graduates for entry into careers in academic environments as clinical scholars or as members of multidisciplinary teams of health professionals in academic centers of clinical and basic health science research.

Admission Requirements

The graduate program in craniofacial biology offers academic graduate training to individuals with a Doctor of Dental Surgery, Medical Doctor or equivalent degree. Applicants with Bachelor of Science degrees in areas

such as biology and chemistry are also encouraged to apply.

Applications

Formal application to the USC Office of Graduate Admission and the graduate program in craniofacial biology is required for Master of Science and Doctor of Philosophy objectives.

All postsecondary transcripts are required and must be forwarded to the Office of Graduate Admission for application to either Master of Science or Doctor of Philosophy objectives. An undergraduate grade point average (GPA) of 3.0 or better, a verbal score of 148 or better, and quantitative score of 152 or better on the Graduate Record Examinations general test are required.

Three letters of recommendation describing academic abilities and personal attributes must be submitted on behalf of the applicant. Personal interviews may be required.

Master of Science in Craniofacial Biology

This degree is under the jurisdiction of the Graduate School. Students should also refer to the Requirements for Graduation section, page xx, and the Graduate School section of this catalogue for general regulations,

page xx. All courses applied toward the degree must be courses accepted by the Graduate School.

The Master of Science degree in craniofacial biology offers the clinician (DDS, M.D. or equivalent) the opportunity to obtain clinical research knowledge and skills in the area of craniofacial biology. Such training will include research into the causes of craniofacial diseases and anomalies, as well as normal development and function. The course of study is particularly directed toward those clinicians committed to pursuing a career in research and teaching.

Degree Requirements

A total of 32 units is required that includes eight courses in craniofacial biology, four units of 594ab Thesis and necessary units of 590 Thesis Research. All students must achieve a 3.0 grade point average in the craniofacial biology courses. Four core courses in craniofacial biology are required for all students: CBY 574, CBY 579L, CBY 585 and CBY 671. The four remaining courses required may be selected from any offered by the craniofacial biology program or other graduate programs and selected by the students and their mentors to best support their research interests. All students are required to complete a thesis based on the student's research following a thesis protocol approved by a committee of craniofacial biology faculty. An advisory committee, comprising the research adviser and two additional faculty members, will establish thesis requirements to be completed by the student.

Graduate Certificate in Craniofacial Biology

The Certificate in Craniofacial Biology is intended to provide dentists in post-graduate dental education with experience in graduate education and insight into the requirements to complete a graduate degree. This will provide the students with additional information relative to selecting academic careers. All certificate students must have a dental degree and have been admitted to a post-graduate dental education program sponsored by the Ostrow School of Dentistry of USC.

Degree Requirements

A total of six CBY courses and 18 units of course work is required for the certificate. The six courses may be selected from the following list: CBY 573, CBY 574, CBY 575, CBY 576, CBY 579L, CBY 583, CBY 585, CBY 587, CBY 672, CBY 673, CBY 674. The credit received for these classes may be applied toward either the M.S. or Ph.D. in Craniofacial Biology should the student decide later to pursue an advanced degree.

Admissions Criteria

Only residents enrolled in advanced dental education and specialty programs will be eligible for the completion of the Certificate in Craniofacial Biology. Residents accepted into the following programs will be eligible: General Practice Residency, Endodontics, Orofacial Pain/Oral Medicine, Oral and Maxillofacial Surgery, Orthodontics, Pediatric Dentistry, Periodontology, Prosthodontics. These residents must complete all the requirements for admission to the dental advanced education programs and have been accepted to these programs by the criteria established by the advanced dental education program faculty.

Doctor of Philosophy in Craniofacial Biology

The Doctor of Philosophy degree in craniofacial biology is awarded under the jurisdiction of the Graduate School. Students should also refer to the Requirements for Graduation section, page xx, and the Graduate School section of this catalogue for general regulations, page xx. All courses applied toward the degree must be courses accepted by the Graduate School.

This program is designed to provide health science-oriented training for the professional with interests in academic, as well as clinical, aspects of craniofacial biology.

New Student Orientation Committee

All new students seeking Master of Science and/or Doctor of Philosophy degree objectives will be assigned to an orientation committee. This committee will function to advise and guide new students through their first semester. Thereafter, each student will identify a mentor and assemble a qualifying exam committee.

Qualifying Exam Committee

During the second semester of study each graduate student should select a qualifying exam committee. The qualifying exam committee must include five faculty members who will be of assistance in the student's education. The student's mentor will serve as chair of the qualifying exam committee. One committee member must be a USC faculty member from outside the program. The graduate program director will be *ex officio* a member of all qualifying exam committees.

The qualifying exam committee will monitor the student's progress, recommend readings or additional training, and determine when the student is ready for the qualifying examination. It is the student's responsibility to meet with the qualifying exam committee at least once during every semester of each academic year. The results of these formal meetings should be summarized by the student in a written statement and submitted to the program director each semester.

Screening Procedure

As soon as the student has satisfactorily completed the core courses and selected the committee, a screening meeting with the qualifying exam committee should be called. The screening procedure may consist of an oral examination; the student will outline his research progress and be examined on academic development. The committee may recommend that the student take specific additional course work and that readings in certain areas be initiated to remedy deficiencies. A brief report will be given to the student and included in his or her file. The student will meet with the committee each semester; they shall agree when the student is prepared to take the qualifying examination in the next semester or if the student should resign or be dropped from the program.

Course Requirements

A total of 60 units is required for the Ph.D. Eight didactic courses at the graduate level are required. The core required CBY courses are CBY 574 or PM 510L, CBY 579L, CBY 585 and INTD 571. The remaining graduate-level courses may be selected from courses offered by any

department, following consultation with the graduate mentor and graduate program director. It is highly recommended that Ph.D. students take the PIBBS core curriculum on the Health Sciences Campus. Students must achieve a 3.0 GPA or better in their course work. Students with a Doctor of Dental Surgery or other professional degree may be granted waivers for having completed equivalent course work.

It is the student's responsibility to obtain from the Graduate School the Request for Permission to Take the Ph.D. Qualifying Examination form which must be signed by all committee members. This form must be completed 60 days before the qualifying examination.

Qualifying Examination

The Ph.D. qualifying examination is offered during the fall or spring semesters. A written examination will cover specific subject areas of the core curriculum, as well as topics selected by the qualifying exam committee. After successfully completing all parts of the written examination, the student will prepare and submit an original research proposal to the qualifying exam committee which presents, in National Institutes of Health (NIH) format, the student's proposed dissertation research. If the submitted proposal is acceptable, an oral examination will be conducted. This examination will include a defense of the proposal and could also include material from the written examination and related topics. A student failing any part of the examination may be allowed one additional opportunity to pass that portion, at the discretion of the qualifying exam committee, within the regulations of the Graduate School governing the repetition of qualifying examinations.

Dissertation

The doctoral dissertation is to focus upon an original research problem which reflects the creative scholarly abilities of the candidate and contributes to the general advancement of biological understanding, as well as to an understanding of the theoretical basis of disease and its treatment.

Defense of the Dissertation

An oral examination on a rough or final copy of the dissertation is conducted within one month following submission of the manuscript to the committee.

Master of Science in Geriatric Dentistry

The Master of Science in Geriatric Dentistry online program consists of a 36.5-month program leading to a master's degree in geriatric dentistry. The curriculum is designed to prepare students to work in the area of geriatric dentistry. The program consists of a series of didactic courses where the students will gain in-depth knowledge about older adults from a variety of perspectives that will include learning about the aging process and how it affects and is affected by social, behavioral and health factors commonly seen with aging. The program will focus on the most common medical and oral health conditions seen in older adults and their treatments, as well as cognitive changes, mental disorders, and social factors that will impact and thus require adjustments to oral health care delivery.

REQUIRED COURSES		UNITS
ADNT 701	Research Methodologies in Dentistry	2
GDEN 710	Knowledge Assessment for GDEN Students	1
GDEN 711abcde	Case Portfolio Preparation for GDEN Students	2.5
GDEN 712abcd	Capstone Research Project for GDEN Students	2
GDEN 713	Common Systemic Conditions in Older Patients	2
GDEN 714	Topics in Gerontology	2
GDEN 715	Geriatric Dentistry Issues	2
OFPM 702ab	Soft Tissue Disease for Dental Residents	3
OFPM 704	Bony Pathology, Radiology and Advanced Imaging for Dental Residents	1
OFPM 705	Neurogenic Based Oral and Facial Pains for Dental Residents	2
OFPM 707	Pharmacology Series for Dental Residents	2
OFPM 710a	Knowledge Assessment for OFPOM Residents	1
OFPM 722	Internal Medicine and Systemic Disease for Dental Residents	2
OFPM 723	Systems Physiology, Motor Disorders and Sleep Apnea for Dental Residents	2
OFPM 725	Epidemiology, Nutrition and Aging for Dental Residents	2
OFPM 726	Immunology and Immunosuppression for Dental Residents	2
Total		30.5

Master of Science in Dental Hygiene

The Master of Science in Dental Hygiene is designed as a 16-month full-time program, but can be taken as a part-time program. The program is designed to train graduate dental hygiene students to become leaders in the field who will help to advance the art and science of the discipline of dental hygiene. Students will learn how to integrate research findings into the dental hygiene process of care to form strategies to decrease oral disease risks and promote oral health among individuals, families and communities. The first three trimesters are devoted to course work that progressively leads to the formation and acceptance of a project plan for implementation in the field in the final trimester.

All students will complete 26 units of required core course work, plus four additional units of elective studies in an area of emphasis, which support their interests and future career plans. Emphasis areas include education, geriatric dentistry and pediatric dentistry. Courses in education will be offered through the Department of Dental Hygiene, while electives in geriatric dentistry and pediatric dentistry will be offered through existing graduate programs at the Ostrow School of Dentistry.

Students will learn program planning, advanced research methodology and statistical data management, and apply these skills into the design and implementation of their project as the basis for their scholarly capstone project. Students will demonstrate active learning

through interactive classes, peer teaching, and the design and use of educational technology. Courses include traditional lecture, case studies, and student written and oral presentations.

Admission Requirements

All applicants to the Master of Science in Dental Hygiene program must satisfy the following general criteria:

- Successfully graduated from an accredited dental hygiene program in North America.
- Possess a baccalaureate degree in dental hygiene or related area from an accredited university.
- Minimum GPA: 3.0
- Scores for the Graduate Record Examinations (GRE);
- Submit three letters of recommendation: one from the undergraduate dental hygiene director and the other two from individuals who can attest to general character. These letters may be from professors, and/or an employer, a representative from a service organization, or from a respected member of the dental hygiene or dental profession.
- Submit a career statement
- Submit a current curriculum vitae

Applicants who meet these requirements will be invited to interview for the program. The interview may take place in person, by telephone, or through a live, interactive electronic communication.

Application Deadlines

In order to be reviewed, the application and required application materials must be received by the division's admissions committee prior to February 15 for a fall semester start. Submit the application well in advance of the deadline and note that transcripts and other application materials may take three weeks or more to be processed by the Office of Admissions and then made available to the office.

Applications received after February 15 are also welcome and will be processed on a space available basis.

Application Procedures

Apply online by going to usc.edu/admission/graduate/apply at least three weeks before the departmental application deadline to allow adequate time for processing. Be sure to complete the supplemental portion that relates to dental hygiene. Arrange to have transcripts and test scores sent to USC in time to meet this deadline.

Materials to Be Submitted by Applicants

Send official transcripts from all colleges attended and GRE tests scores to:

University of Southern California
USC Office of Graduate Admission
3601 South Flower Street Room 112
Los Angeles, CA 90089-0915
The application fee is nonrefundable.

Supplemental Materials to be Submitted to:

Ostrow School of Dentistry of USC
Office of Admissions Room 201
925 W. 34th Street
Los Angeles, CA 90089-0641

Supplemental Materials Include:

- Three letters of recommendation. Letters of recommendation must be in a sealed envelope with a signature across the back.
- Career statement
- Current résumé / curriculum vitae

Degree Requirements

Completion of the degree requires satisfactory completion of a minimum of 30 credits of course work at the 500 level or above including a capstone project, which consists of a comprehensive written scholarly report suitable for publication and a defended oral presentation.

REQUIRED COURSES		UNITS
CBY 585	Systematic Research Writing	3
EDU 622	Educational Theory and Instructional Design	2
EDU 632	Technology in Higher Education	2
DHYG 501	Dental Hygiene Theory and Science I	3
DHYG 502	Dental Hygiene Seminar I	1
DHYG 504	Dental Hygiene Theory and Science II	3
DHYG 505	Dental Hygiene Seminar II	1
DHYG 506	Research Methodologies and Statistics	3
DHYG 507	Dental Hygiene Theory and Science III	3
DHYG 508	Dental Hygiene Seminar	1
DHYG 510	Capstone Project	4

Areas of Emphasis (must choose four units within one area)

Education

DHYG 511	Classroom and Clinical Instruction Design	2
DHYG 512	Student Teaching	2

Geriatrics

GDEN 713	Common Systemic Conditions in Older Patients	2
GDEN 714	Topics in Gerontology	2
GDEN 715	Geriatric Dentistry Issues	2

Pediatrics

PEDO 704a	Prevention in Pediatric Dentistry	2
PEDO 704b	Prevention in Pediatric Dentistry	2
PEDO 705	Pediatric Diseases	2

A minimum grade point average of 3.0 on all graduate work is required.

Progressive Degree Program

Applicants for a progressive degree program must have completed 64 units of course work applicable to their undergraduate degree since graduating from high school. (AP units, IB units and course work taken prior to high school graduation are excluded.) Applicants must submit their application before completing 96 units of course work. Normally, the application is submitted in the fall semester of the third year of enrollment at USC. Applicants do not have to submit GRE scores but

are expected to have at least a 3.0 GPA at the time of application.

The application for admission to a progressive master's program must be approved by the deans of the bachelor's and the master's degree-granting schools at USC and submitted to the Degree Progress Department. An approved course plan proposal and letters of recommendation from two USC faculty members must be submitted with the application, with at least one of the recommendations coming from a faculty member in the student's bachelor's degree major department.

Continuing Education

The Office of Continuing Education provides education courses, participation programs and national and international symposia in many areas of the dental profession. These educational activities are designed to offer updated and innovative concepts to dentists, dental hygienists, dental technicians and auxiliary personnel, and to provide the dental community with the opportunity for lifelong learning from outstanding scholars. In addition, the courses fulfill continuing education requirements of the California Board of Dental Examiners for relicensure of dentists and auxiliaries. The Ostrow School of Dentistry of USC is a recognized American Dental Association (ADA) and a Continuing Education Recognition Program (CERP) provider.

Courses are given at regular intervals in the various subjects of dentistry: oral health, dental esthetics, oral medicine, physical diagnosis, dental materials, dental laboratory techniques, dental management, endodontics, periodontics, implants, oral surgery, restorative dentistry, fixed and removable prosthodontics, instrumentation, occlusion, oral pathology, dental hygiene, dental auxiliary education, patient education, pharmacology, principles of dental practice, radiology, sedation and emergencies.

Information on schedules of classes may be obtained by writing to: Ostrow School of Dentistry of USC, Office of Continuing Education, Room 201J, University Park, Los Angeles, CA 90089-0641, (213) 821-2127, FAX: (213) 740-3973, email cedental@usc.edu or refer to the school's Website at uscdentalce.org.

Courses of Instruction

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

DENTISTRY (DENT)

DENT 221 Introduction to Dentistry (1) History and current role of dental science in the health services field; review of research; overview of dental procedures with laboratory experience and practice observation.

DENT 402 Formal Science-Writing (2) A scientist-taught, lecture-workshop-tutorial format for developing skills in formal science-writing (e.g., abstracts, journal articles, grants). Not open to students in the School of Dentistry. *Prerequisite:* upper division standing in science and preprofessional majors.

DENT 412 Fundamentals of Craniofacial and Dental Technology (3, Sp) Biomedical engineering and technology applied to oral health professions. Dental biomaterials, CAD-CAM, digital dental technology and tissue engineering applications to craniofacial diseases, disorders, and enhancements. Junior standing. (Duplicates credit in former BME 412.)

ADVANCED DENTAL EDUCATION CONJOINT PROGRAM (ADNT)

ADNT 701 Research Methodologies in Dentistry (2) Critical evaluation of the scientific principles in the development, execution, and interpretation of methodologies used in dentistry.

ADNT 702 Physical Diagnosis (2) Didactic and clinical experience in physical diagnosis relevant to practice of the dental specialties. Lecture, 1 hour; demonstration, 1 hour.

ADNT 703abcdehij Seminar: Combined Treatment Planning (2 each) Interdisciplinary consideration of complex cases which involve several of the dental specialties.

ADNT 704abc Oral Biology (1-13 each) Interdisciplinary consideration of contemporary biology of the cell, bone, teeth, periodontium, occlusion, dental pulp, pain and human growth and development.

ADNT 706 Seminar: Diseases of Childhood (2) Intraoral hard and soft tissue pathologic conditions in children, common bacterial and viral diseases and their transmission in the pediatric dental environment. Seminar, 2 hours. Graded CR/NC.

ADNT 707 Behavior of the Child Patient (2) Child and adolescent psychological growth and development: Human communication, needs, motivation, and learning. Critical analysis of patient management, team treatment, and practice administration. Lecture, 2 hours.

ADNT 710 Internship: Dental Education (1-5) Practical experience teaching predoctoral students. Units and hours variable.

ANATOMY (ANAT)

ANAT 321 Head and Neck Anatomy (2) Anatomy of the head and neck with lecture and laboratory demonstration for dental hygienists.

ANAT 501 Functional Neuroanatomy-Neurophysiology (3) Structure and function of the human nervous system. Includes participation in neurology clinics at LAC+USC Medical Center.

ANAT 521 Head and Neck Anatomy (2, Fa) Detailed morphology of the head and neck emphasizing considerations applicable to dentistry; morphology of the thorax; osteology of the skull.

ANAT 522 Systemic Human Anatomy (3) Structure and function of the human body; organ systems and morphology of the abdomen and pelvis; axilla and arm; osteology of the skull.

ANAT 523 Head and Neck Dissection (1) Laboratory experience in dissection of the structures of the human head and neck with emphasis on the osteology and morphology of the face.

ANAT 701 Advanced Head and Neck Anatomy (1) Detailed study of structure and function of the orofacial region including recent research and advances in dentistry.

ANAT 722 Advanced Head and Neck Anatomy Laboratory (1) Dissection of the head and neck with emphasis on the osteology and morphology of the face. *Prerequisite:* ANAT 701 enrollment.

ANESTHESIA AND MEDICINE (AMED)

AMED 421 Seminar: Teaching Local Anesthesia (1) Techniques of teaching local anesthesia to dental hygiene students.

AMED 502 Emergency Medicine (2) Recognition and management of life-threatening emergencies, including unconsciousness, altered consciousness, respiratory distress, convulsions, drug-related emergencies, and chest pain.

AMED 523 Pharmacosedation II (1) Introduction to intravenous sedation; evaluation of patient, selection of technique and procedure; prevention of complications, recognition and management of complications; introduction to general anesthesia.

AMED 524 Pain and Anxiety Control (2, Sp) Theory and techniques for pain control, anxiety includes: local anesthetics; drugs, adjunctive premedication, techniques in oral, rectal, intramuscular, inhalation sedation, prevention, management of complications. (Duplicates credit in the former AMED 521 and AMED 522.)

AMED 605abcde Seminar: Intravenous Sedation (0-0-0-0-4) Review of the literature and a selection of case studies in intravenous sedation.

AMED 606abcde Clinical Intravenous Sedation (0-0-0-0-3) Management of patients receiving intravenous sedation, including physical evaluation, patient monitoring, recognition and management of unconscious airway and emergency situations; IV sedation procedures.

AMED 610 Physical Diagnosis/Cardiology (1) Participation in the Cardiac Clinic at LAC+USC Medical Center; experience in cardiac auscultation, abnormal breath sounds, use of cardiac drugs, and prosthetic valve management.

AMED 613abcde Clinic: Intravenous Sedation (0-0-0-0-3) Clinical experience in intravenous sedation including physical evaluation, patient monitoring, and management of unconscious airway. *Prerequisite:* AMED 606e.

AMED 750abc Physical Evaluation and Anesthesia (2-2-1) In-depth examination of physical evaluation, emergency medicine, basic life support, inhalation sedation, intravenous sedation, local anesthesia, and patient monitoring; includes clinical experience.

BIOCHEMISTRY (DBIO)

DBIO 310 Oral Biochemistry (2, Fa) Biochemical insight into oral tissues and saliva — emphasizing antimicrobial protection (systemic and therapeutic) against demineralization and connective tissue destruction.

DBIO 501 Biochemistry and Molecular Biology (2) Biochemical properties of carbohydrates, lipids, amino acids, proteins, and nucleic acids — emphasizing molecular structure-function interrelatedness, integrated metabolism, and molecular biology of the cell.

CRANIOFACIAL BIOLOGY (CBY)

CBY 561 Molecular Genetics (4, Sp) (Enroll in INTD 561)

CBY 571 Biochemistry (4, Fa) (Enroll in INTD 571)

CBY 573 Molecular Embryology (4) Principles of developmental biology; emphasis on molecular genetics and cell and molecular mechanisms of tissue interaction and morphodifferentiation.

CBY 574 Statistical Methods in Bioexperimentation (3) Experimental design and analysis as applied to all levels of biologic organization; hypothesis construction; probability; univariate and multivariate analysis; basic epidemiology.

CBY 575 Biologic Basis of Oral-facial Disease (3, FaSpSm) Cell and molecular biology of oral tissues in disease: emphasis on immunopathology. (Duplicates credit in former CBY 575a).

CBY 576 Biochemical Aspects of Periodontal Disease (3, FaSpSm) Cell and molecular biology of oral tissues in disease; emphasis on molecular oral pathology. (Duplicates credit in former CBY 575b).

CBY 578 Pathological Conditions of the Craniofacial Complex (3, FaSpSm) Acquired and inherited, systemic and local disease resulting in clinical craniofacial morbidity: cellular and molecular expression as related to etiology, diagnosis, treatment, and prognosis.

CBY 579L Craniofacial Molecular Genetics (4) Principles and methodologies of mammalian molecular genetics; laboratory exercises applied to pre- and post-natal craniofacial growth and development.

CBY 580ab Seminars in Craniofacial Biology (2-2) Seminars presented by recognized researchers in the various disciplines relating to craniofacial biology; selected readings in preparation for discussion. Graded CR/NC.

CBY 582L Laboratory Methods (3) Contemporary methods of laboratory analysis, including theoretical and practical exposure to procedures and equipment in the research laboratory.

CBY 583 Craniofacial Clinical Genetics (4) Principles of human genetics; clinically oriented normal and abnormal human embryology; diagnosis and natural history of human craniofacial birth defects; genetic counseling and bioethics.

CBY 585 Systematic Research Writing (3, FaSpSm) Enhancement of critical research thinking by fulfilling anticipated conceptual components of the journal article; perfection of writing skills by correcting inter- and intrasentence flaws.

CBY 586x Scientific Writing Practicum (3) Development of writing skill while completing a discipline-required project (proposal, dissertation, journal article). Seminar and tutorial format. Not for graduate credit. *Prerequisite:* CBY 585 or DENT 402.

CBY 587 Cell and Molecular Biology of Craniofacial Tissues (3) Contemporary cell and molecular biology as applied to the development, structure, and function of craniofacial tissues.

CBY 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

CBY 594abz Master's Thesis (2-2-0) Credit on acceptance of thesis. Graded IP/CR/NC.

CBY 599 Special Topics (2-4, max 8) Seminars on craniofacial biology in subject areas of special interest to faculty and students.

CBY 671 Epistemology and Ethos of Bioscience (2) Classical and contemporary thought on knowledge acquisition, truth, and method as applied to bioscience; characteristic spirit, beliefs, and moral assumptions of bioscientists in modern history.

CBY 672 Advances in Development and Differentiation (2) Integration of recent advances in cell and molecular developmental biology into classical and emerging thematic frameworks.

CBY 673 Biomineralization (2) Fundamental principles and mechanisms of matrix mediated biomineralization in model systems from bacteria to humans.

CBY 674 Advanced Oral Microbiology (2) Cell and molecular aspects of microbiology as applied to oral infections: microbial physiology and genetics; oral microbial ecology; host resistance factors in oral infections.

CBY 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

CBY 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC.

COMMUNITY DENTISTRY (CMDT)

CMDT 501 Introduction to Community Dentistry Programs (1) Lectures and practical field experiences introducing the role of the dentist in a variety of organized public health programs.

CMDT 502ab Contemporary Dental Practice (2-2) Economic, legal, and professional aspects of dental practice; alternative careers in dentistry.

CMDT 507abc Ethical Issues in the Practice of Dentistry (0-0-1) Examination of the major ethical issues in the current practice of dentistry; study of effective and proper methods of addressing the issues.

CMDT 601 Mobile Clinic (1) Clinic experience in provision of dental care for children of low income agricultural workers through use of mobile dental clinic on location.

CMDT 603 Multiphasic Experiences in Extramural Dentistry (1) Community responsibilities of dentists in a dynamic society. Practical experiences include consultations and visitations to private offices, group practices, hospitals, and neighborhood health clinics.

CMDT 606 Business Principles in Dentistry (2) Overview of basic business administration principles, including economics, accounting, marketing, finance, entrepreneurship, and strategic planning as relevant to the practice of dentistry.

CMDT 607abc Sports Dentistry (0-0-2) The role of the dentist in prevention, diagnosis, and treatment of sports related dental trauma; recognition and correct referral of sports injuries and medical problems; clinical treatment of athletes including exposure to cerebral concussion, hypothermia, heat stroke and Sudden Death Syndrome.

CMDT 608abc Community Service (0-0-1) Two one-hour seminars plus four separate days of field experience. Participate in health fairs, classroom screening, health education, career counseling, and other community projects.

DENTAL HYGIENE (DHYG)

DHYG 311ab Fundamentals of Clinical Dental Hygiene Practice (3-3) Principles and techniques of clinical dental hygiene with emphasis on preventive dentistry; laboratory and preclinical experience in techniques of complete oral prophylaxis services; and clinical application thereof.

DHYG 314L Dental Morphology Laboratory (1) Fundamentals of tooth morphology and characteristics of the deciduous and permanent dentition. Laboratory, 3 hours.

DHYG 316 Patient Education in Preventive Dental Care (1) Principles and methods for teaching and motivating patients to practice effective oral care.

DHYG 318 Dental Specialties (2) Procedures performed in selected dental specialty areas with emphasis on the role of the dental hygienist.

DHYG 320 Preventive Dental Therapy (2, Sp) Study of etiology, risk factors and preventive management of periodontal disease and dental caries. Setting up community and individual preventive oral health care programs.

DHYG 401 Introduction to Advanced Dental Hygiene (2) Principles and techniques of advanced dental hygiene with emphasis on advanced root instrumentation and dental hygiene treatment planning.

DHYG 410abc Clinic: Dental Hygiene (2-7 each) Application of advanced techniques with emphasis on increased proficiency in skills: principles of prevention; periodontal examination; root planing; soft tissue curettage; local anesthesia; inhalation sedation.

DHYG 411ab Dental Literature Review (2-2) Seminar-discussion and analysis of current dental literature in selected topics related to dental hygiene practice.

DHYG 412 Preventive Dental Care Programs (1) Methods for development and implementation of programs involved with the delivery of preventive dental care.

DHYG 413ab Dental Hygiene Educational Concepts (2-2) Educational concepts for development of dental hygiene curriculum, including teaching and learning strategies, curriculum design, course development and evaluation methods.

DHYG 414ab Advanced Dental Hygiene (2-2) Advanced dental hygiene techniques: treatment, referral and maintenance of the advanced periodontitis patient emphasizing treatment planning and patient management.

DHYG 415ab Directed Clinical Teaching (2-2) Experience in clinical teaching with supervision and evaluation of undergraduate dental hygiene and doctoral dental students engaging in patient care.

DHYG 417 Issues in Dental Health Care Delivery (1) Study of current trends in public health care delivery, manpower, finance mechanisms, and quality assurance.

DHYG 422 Essentials of Dental Hygiene Practice (1) A review of the moral, legal, and ethical responsibilities of the dental hygienist. Other topics: securing a position, dental economics, taxes, insurance, and human relationships in the dental office. Lecture, 1 hour.

DHYG 424ab Research Methods (1-1) Critical evaluation of scientific literature; techniques of writing and coordinating scientific information for research papers; techniques for preparation of scientific table clinics. Graded IP.

DHYG 430 Seminar: Initial Periodontal Therapy (2) Presentation of selected clinical cases with documentation of clinical findings, diagnosis, treatment planning, and therapy.

DHYG 431 Seminar: Periodontal Treatment Planning (2) Periodontal treatment planning; case presentations of uncomplicated periodontitis progressing to complex treatment involving multidisciplinary approach.

DHYG 460abcd Clinic: Advanced Dental Hygiene (2-2-1-1) Clinical experience in advanced dental hygiene; preventive and therapeutic skills with emphasis on advanced periodontal instrumentation and expanded functions for the registered dental hygienist.

DHYG 501 Dental Hygiene Theory and Science I (3, Fa) Issues related to professional development and the advancement of the discipline of dental hygiene. *Concurrent enrollment:* DHYG 502.

DHYG 502 Dental Hygiene Seminar I (1, Fa) Ethical principles guiding research and practice in the health care setting, with an emphasis on the rights and protection of human subjects. *Concurrent enrollment:* DHYG 501.

DHYG 504 Dental Hygiene Theory and Science II (3, Sp) Issues related to oral health promotion and disease prevention, and health services research. Includes epidemiology, health disparities, quality assurance, literacy and cultural competency. *Concurrent enrollment:* DHYG 505.

DHYG 505 Dental Hygiene Seminar II (1, Sp) Design of community health programs and health research. Includes project and study design, and applying methodological and statistical knowledge to project development. *Concurrent enrollment:* DHYG 504.

DHYG 506 Research Methodologies and Statistics (3, Fa) Process and fundamentals of research protocol design and statistical methods. Includes research design and methods, scientific database searching and evidence-based resources.

DHYG 507 Dental Hygiene Theory and Science III (3, Sm) Analysis of disease diagnoses, medical complications, pharmacologic interventions and therapeutic treatment modalities associated with a variety of system diseases. *Concurrent enrollment:* DHYG 508.

DHYG 508 Dental Hygiene Seminar III (1, Sm) Strategies for project data management and analysis, and dissemination of scholarly information through journal publications and oral and poster scientific presentations. *Concurrent enrollment:* DHYG 507.

DHYG 510 Capstone Project (4, Fa) Students will complete independent field work to implement planned scholarly activities in their professional area of interest, culminating in a written paper and an oral defense.

DHYG 511 Classroom and Clinical Instruction Design (2, Sp) Apply teaching and learning theories to the development of educational interventions to teach clinical dental hygiene skills in both clinical and laboratory classroom settings.

DHYG 512 Student Teaching (2, Sm) Applied study of dental hygiene education, with practical experience teaching in the classroom and laboratory settings, and teaching in the dental hygiene clinic. *Prerequisite:* DHYG 511.

ORAL DIAGNOSIS AND RADIOLOGY (DIAG)

DIAG 415 Radiographic Techniques (1) Clinical application of radiographic chairside and dark room techniques and quality control.

DIAG 521 Principles of Oral Radiology (2) Introduction to ionizing radiation and its use in the health professions; radiation biology, physics and hygiene; descriptive terms used in radiography, with illustrations; documentation.

DIAG 522 Radiographic Techniques (1) Clinical applications of radiographic chairside and darkroom techniques; quality control and evaluation of the radiograph.

DIAG 523 Oral Maxillofacial Imaging (2, Sm) Clinical application of intraoral and extraoral radiographic techniques; emphasis upon radiation physics, biology, safety, film and digital imaging and image interpretation.

DIAG 615 Digital and Oral Maxillofacial Imaging (2-4, FaSp) Introduction to computer based imaging in dentistry. Student will learn to use video cameras, scanners, intraoral sensors and advanced imaging technology. Open to dentistry and dental hygiene majors only. *Prerequisite:* DIAG 521, DIAG 522.

DIAG 621 CAD/CAM in Dentistry (1) Modern principles of dental Computer Assisted Design/Computer Assisted Manufacturing and will fabricate such restorations in the laboratory.

DENTAL MATERIALS (DMAT)

DMAT 316L Dental Materials and Clinical Procedures (2) Biomechanical principles, properties, and manipulation of dental materials; armamentarium for various dental procedures.

DMAT 505 Dental Materials Update (1) Biocompatibility of dental materials, restorative materials and techniques update, critical analysis of published literature. Includes specific laboratory testing research methodology and design of clinical trials.

DMAT 521ab Dental Materials (2-2) Properties, biomechanical function, manipulation, and clinical application of dental materials. Correlates restorative, biological, and materials sciences.

DMAT 701 Advanced Biomaterials (2) Fundamental principles of materials science and clinical dentistry relative to proper selection and manipulation of dental materials.

DENTAL PROBLEM BASED LEARNING (DPBL)

DPBL 501abc Dental Problem Based Learning — Human Structure I (3-3-3, FaSpSm) Problem based learning presentation of normal and abnormal structures including anatomy, cell biology, embryology, histology, pathology from cells, tissues and organs of the human body. All material discussed with direct relationship to a well-characterized human clinical case. Acceptance to DDS program required.

DPBL 502abc Dental Problem Based Learning — Human Function I (8-8-8, FaSpSm) Problem based learning presentation of normal and abnormal function including biochemistry, endocrinology, genetics, immunology, microbiology, nutrition, pharmacology, physiology from cells, tissues and organs of the human body. All material discussed with direct relationship to a well-characterized human clinical case. Acceptance to DDS program required.

DPBL 503abc Dental Problem Based Learning — Human Behavior I (2-2-2, FaSpSm) Problem based learning presentation of normal and abnormal behavior including communication, ethics, multiculturalism, patient management, phobias associated with treatment of patients with and without special needs. All material discussed with direct relationship to a well-characterized human clinical case. Acceptance to DDS program required.

DPBL 504abc Dental Problem Based Learning — Human Clinical Dentistry I (4-4-4, FaSpSm) Problem based learning approach to the delivery of dental health care. Didactic, preclinical and clinical principles of endodontics, geriatrics, oral diagnosis, oral pathology, oral radiology, oral surgery, orthodontics, pediatric dentistry, periodontics, prosthodontics and restorative dentistry will be presented with a direct relationship to a well-characterized human clinical case. Acceptance to DDS program required.

DPBL 511abc Dental Problem Based Learning — Human Structure II (2-2-2, FaSpSm) Problem based learning presentation of normal and abnormal structures including anatomy, cell biology, embryology, histology, pathology from cells, tissues and organs of the human body. All material discussed with direct relationship to a well-characterized human clinical case. *Prerequisite:* DPBL 502c.

DPBL 512abc Dental Problem Based Learning — Human Function II (5-5-5, FaSpSm) Problem based learning presentation of normal and abnormal function including biochemistry, endocrinology, genetics, immunology, microbiology, nutrition, pharmacology, physiology from cells, tissues and organs of the human body. All material discussed with direct relationship to a well-characterized human clinical case. *Prerequisite:* DPBL 502c.

DPBL 513abc Dental Problem Based Learning — Human Behavior II (3-3-2, FaSpSm) Problem based learning presentation of normal and abnormal behavior including communication, ethics, multiculturalism, patient management, phobias associated with treatment of patients with and without special needs. All material discussed with direct relationship to a well-characterized human clinical case. *Prerequisite:* DPBL 502c.

DPBL 514abc Dental Problem Based Learning — Human Clinical Dentistry II (7-7-8, FaSpSm) Problem based learning approach to the delivery of dental health care. Didactic, preclinical and clinical principles of endodontics, geriatrics, oral diagnosis, oral pathology, oral radiology, oral surgery, orthodontics, pediatric dentistry, periodontics, prosthodontics and restorative dentistry will be presented with a direct relationship to a well-characterized human clinical case. *Prerequisite:* DPBL 504c.

DPBL 521abc Dental Problem Based Learning — Human Structure III (1-1-1, FaSpSm) Problem based learning presentation of normal and abnormal structures including anatomy, cell biology, embryology, histology, pathology from cells, tissues and organs of the human body. All material discussed with direct relationship to a well-characterized human clinical case. *Prerequisite:* DPBL 511c.

DPBL 522abc Dental Problem Based Learning — Human Function III (1-1-1, FaSpSm) Problem based learning presentation of normal and abnormal function including biochemistry, endocrinology, genetics, immunology, microbiology, nutrition, pharmacology, physiology from cells, tissues and organs of the human body. All material discussed with direct relationship to a well-characterized human clinical case. *Prerequisite:* DPBL 512c.

DPBL 523abc Dental Problem Based Learning — Human Behavior III (1-1-1, FaSpSm) Problem based learning presentation of normal and abnormal behavior including communication, ethics, multiculturalism, patient management, phobias associated with treatment of patients with and without special needs. All material discussed with direct relationship to a well-characterized human clinical case. *Prerequisite:* DPBL 502c.

DPBL 524abc Dental Problem Based Learning — Human Clinical Dentistry III (14-14-14, FaSpSm) Problem based learning approach to the delivery of dental health care. Didactic, preclinical and clinical principles of endodontics, geriatrics, oral diagnosis, oral pathology, oral radiology, oral surgery, orthodontics, pediatric dentistry, periodontics, prosthodontics and restorative dentistry will be presented with a direct relationship to a well-characterized human clinical case. *Prerequisite:* DPBL 502c.

DPBL 531ab Dental Problem Based Learning — Human Structure IV (1-1, FaSp) Problem based learning presentation of normal and abnormal structures including anatomy, cell biology, embryology, histology, pathology from cells, tissues and organs of the human body. All material discussed with direct relationship to a well-characterized human clinical case. *Prerequisite:* DPBL 502c.

DPBL 532ab Dental Problem Based Learning — Human Function IV (1-1, FaSp) Problem based learning presentation of normal and abnormal function including biochemistry, endocrinology, genetics, immunology, microbiology, nutrition, pharmacology, physiology from cells, tissues and organs of the human body. All material discussed with direct relationship to a well-characterized human clinical case. *Prerequisite:* DPBL 512c.

DPBL 533ab Dental Problem Based Learning — Human Behavior IV (1-1, FaSp) Problem based learning presentation of normal and abnormal behavior including communication, ethics, multiculturalism, patient management, phobias associated with treatment of patients with and without special needs. All material discussed with direct relationship to a well-characterized human clinical case. *Prerequisite:* DPBL 523c.

DPBL 534ab Dental Problem Based Learning — Human Clinical Dentistry IV (13-13, FaSp) Problem based learning approach to the delivery of dental health care. Didactic, preclinical and clinical principles of endodontics, geriatrics, oral diagnosis, oral pathology, oral radiology, oral surgery, orthodontics, pediatric dentistry, periodontics, prosthodontics and restorative dentistry will be presented with a direct relationship to a well-characterized human clinical case. *Prerequisite:* DPBL 502c.

ENDODONTICS (ENDO)

ENDO 501 Clinical Endodontics (1) Diagnosis and treatment procedures for basic clinical endodontics, including management of endodontic emergencies; relationship of endodontics to the various dental disciplines.

ENDO 502 Advanced Endodontics (1) Theoretical principles for the treatment of advanced endodontic cases; alternative methods of endodontic therapy; introduction to interspecialty cases.

ENDO 521 Preclinical Endodontics (3) Theoretical principles of endodontic therapy related to pulpal and periapical disease; training in procedures of localizing, preparing, and filling the root canal of human teeth.

ENDO 562abcd Clinic: Concentrated Early Endodontics (0-0-0-1) Early clinical experience including assigned clinic demonstration block.

ENDO 563ab Clinic: Endodontic Therapy (0-2) Clinical experience emphasizing diagnosis, treatment planning, and endodontic patient management.

ENDO 610 Clinical Advanced Endodontics (2) In-depth discussion of endodontic surgery, retreatment, and hemisection cases; includes clinical experience in advanced endodontic cases.

ENDO 701abcd Seminar: Biological Basis of Endodontic Therapy (1-1-1-1) Investigation of the theoretical and biological bases of clinical endodontic procedures.

ENDO 702 Seminar: Advanced Clinical Endodontics (2) Course designed to train students in the management of simple and complex endodontic cases.

ENDO 703abcd Seminar: Review of Endodontic Literature (1-1-1-1) Critical review and analysis of classical and current endodontic literature.

ENDO 704ab Seminar: Surgical Endodontics (2-2) Indications, principles, and techniques of surgical endodontics.

ENDO 705ab Seminar: Endodontic Case Presentation (4-4) Student presentation of cases for critique and analysis.

ENDO 710 Seminar: Endodontic Practice Management (2) Organizing, staffing, and evaluation of an endodontic practice. Modes and patterns of management including use of auxiliaries. Emphasis on endodontist-general practitioner relationship; legal aspects of dental practice. Seminar, 2 hours.

ENDO 711 Alternatives in Endodontics (4) Alternative endodontic techniques presented by guest clinicians. Emphasis on endodontics and its relationship with periodontal, restorative, and surgical disciplines.

ENDO 761abcdef Clinic: Advanced Endodontics (1-9 each) Advanced clinical experience emphasizing the diagnosis and management of complicated endodontic cases.

ENDO 790 Directed Research: Endodontics (1-12) Principles of planning, organizing, and executing a clinical or educational research project. Graded CR/NC.

FIXED PROSTHODONTICS (FPRO)

FPRO 520 Preclinical Fixed Prosthodontics (ISP) (2) Basic fundamentals of fixed prosthodontics; preparation for clinical procedures in posterior PFM's, posterior mandibular FPD's and in restoring endodontically treated teeth.

FPRO 521 Preclinical Fixed Prosthodontics I (3) Fundamentals and principles of posterior prosthodontic procedures, including diagnosis, biomechanic principles, and construction of fixed prosthodontic restorations.

FPRO 522 Preclinical Fixed Prosthodontics II (3) Fundamentals of aesthetic restorations; fabrication of posterior and anterior porcelain-fused-to-metal restorations and anterior porcelain jacket crown; restoration of endodontically treated teeth.

FPRO 561abcd Clinic: Fixed Prosthodontics I (0-0-0-3) Clinical application of fixed prosthodontic principles in patient treatment.

FPRO 562ab Clinic: Fixed Prosthodontics II (0-3) Clinical application of fixed prosthodontic principles in patient treatment.

FPRO 601 Advanced Fixed Prosthodontics (4) Critical review and evaluation of the fixed prosthodontic literature; guided experience in the laboratory and clinical phases of fixed prosthodontic therapy.

GERIATRIC AND SPECIAL PATIENT DENTISTRY (GSPD)

GSPD 504 Dental Treatment of the Geriatric and Special Patient (2) Social, psychological, economic and health factors which influence dental care for the geriatric and special patient populations; specific considerations and modifications of conventional dental treatment.

GSPD 562abc Clinic: Geriatric Dentistry (0-0-1) Clinical experience in dental treatment of geriatric patients at an extramural site.

GSPD 563abc Clinic: Special Patient Care (0-0-1) Clinical experience in treatment of the physically, medically, or mentally disabled patient.

GSPD 610 Clinical Gerontology (1) Clinical application of principles of geriatric dentistry. Evaluation, treatment planning, and clinical care of elderly patients at residential and skilled-nursing care facilities.

GSPD 612 Special Patient Care Clinic (1) Clinical experience in the evaluation, diagnosis, treatment planning and management of oral problems in special needs patients.

GERIATRIC DENTISTRY (GDEN)

GDEN 710 Knowledge Assessment for GDEN Students (1, Sm) Review of topics explored in the first two years of the program, including lectures and practical demonstrations or simulations and examinations of overall discipline knowledge. Open only to GDEN students. Graded CR/NC. *Prerequisite:* ADNT 701, GDEN 713, GDEN 714, OFPM 710a, OFPM 725 and OFPM 726.

GDEN 711abcde Case Portfolio Preparation for GDEN Students (.5-.5-.5-.5-.5, FaSpSm) Examination of clinical cases of geriatric patients through online conferences. Development and defense of portfolio of multiple cases. Credit on acceptance of portfolio. Open only to GDEN students. Graded IP/CR/NC.

GDEN 712abcd Capstone Research Project for GDEN Students (.5-.5-.5-.5, FaSpSm) Production and defense of a research plan that demonstrates significant understanding of a topic in geriatric dentistry. Credit on acceptance of capstone project. Open only to GDEN students. Graded IP/CR/NC. *Prerequisite:* ADNT 701.

GDEN 713 Common Systemic Conditions in Older Patients (2, Sp) Lectures on topics pertinent to the aging patient that highlight the differences between aging physiologic changes and disease-caused conditions most common to this demographic. Open only to GDEN students. Graded CR/NC.

GDEN 714 Topics in Gerontology (2, Fa) Gerontology topics for dentists including clinical assessment tools for aging patients, policy issues, myths, social supports, and consent and communication issues in the clinical setting. Open only to GDEN students. Graded CR/NC.

GDEN 715 Geriatric Dentistry Issues (2, Fa) Common geriatric dentistry topics including epidemiology of oral diseases, common dental diseases, their management and prevention protocols for older adult patients. Open only to GDEN students. Graded CR/NC.

HISTOLOGY (DHIS)

DHIS 310 Basic Tissues and Histology and Embryology (2, Fa) Histology of basic tissues, oral histology, orofacial embryology, orofacial clefts and functional correlates.

DHIS 701 Advanced Oral Histology (2) Microscopic anatomy, ultrastructure and histochemistry of developing and functional oral tissues; based on recent advanced in oral LM, TEM, and SEM histology.

HUMAN BEHAVIOR (HBHV)

HBHV 310 Interactional Skills in Dental Hygiene (1) Training in the application of behavioral and communication skills.

HBHV 501 Behavioral Skills in Dentistry (1) Introduction to key personal, interpersonal, and professional factors that shape the doctor-patient relationship; ways interactional skills influence the effectiveness, durability, and satisfaction of the doctor-patient relationship.

HBHV 502 Interactional Skills (1) Introduction to purpose, objectives, and principles of clinical interviewing.

HBHV 504 Patient Education and Management (1) Management of difficult patients; psychology and behavioral treatment of pain; patient education of treatment planning; smoking cessation program.

HBHV 550 Communications in Clinical Dentistry (1) Verbal and nonverbal communication in clinical dentistry; clinical experience in use of manual, verbal, and non-verbal communication skills during a traumatic injection procedure.

HBHV 561abcde Clinic: Behavioral Dentistry (0-0-0-0-1) Clinical application of behavioral dentistry principles. Data collection, case presentation, fear reduction (iatrosedation), and tobacco cessation.

HBHV 601 Understanding Stress in Dental Practice (2) Investigation of the approaches to understanding and managing stress, especially the stress issues in dentistry.

INTERDISCIPLINARY — BASIC SCIENCES (INTB)

INTB 504 Human Craniofacial Development and Genetics (3) Principles of human embryology and genetics; craniofacial developmental biology; molecular genetics, cytogenetics, clinical orofacial genetics, genetic counseling; bioethics.

INTB 521 Basic and Medical Microbiology (2) Fundamentals of microbial structure, growth and physiology; major bacterial, viral and fungal diseases, symptoms, course, control and treatment; emphasis on diseases related to dental management.

INTB 601 Advances in Oral Biology (2) Review of basics of scientific methodology; comparison between and indications for scientific studies and case reports; critical review of current dental literature.

INTB 603 Systematic Approach to Scientific Writing (2) Study of dental research publication and review of writing principles; focus on logical arrangement of information, avoidance of common writing flaws, attainment of syntactical fluency.

INTB 604 Clinics in Craniofacial Malformations (2) Diagnosis, treatment, and rehabilitation of craniofacial malformations; principles of health care of craniofacial malformation patients. Includes hospital clinical observation.

INTB 650abcdef Dental Research Participation (1-6 each) Assist in research in basic science, biomedical, or clinical dental areas. Experience in research strategy, design and methods using practical scientific problem solving.

INTB 651abcd Experience in Dental Teaching (1-6 each) Practical teaching experience in dental laboratory and clinic settings under faculty supervision. Includes instruction in effective methods.

INTB 652 Externship (1-6) Dental experience at an off-site location — not limited to clinical experience. Student participation must be approved by Associate Dean, Academic Affairs.

INTB 690abcdef Directed Dental Research (1-12 each) Dental clinical and/or basic science research under faculty guidance; proposal developed, research conducted, conclusion drawn, paper written. Units determined by extent of research. Graded CR/NC.

INTERDISCIPLINARY — DEVELOPMENTAL DENTISTRY (INDD)

INDD 501 Applied Growth and Development (1) Clinical relevance of chronological and biological assessment of maturation related primarily to diagnosis and prognosis.

INDD 650abcdef Dental Research Participation (1-6 each) Assist in research in basic science, biomedical, or clinical dental areas. Experience in research strategy, design and methods using practical scientific problem solving.

INDD 651abcd Experience in Dental Teaching (1-6 each) Practical teaching experience in dental laboratory and clinic settings under faculty supervision. Includes instruction in effective methods.

INDD 652 Externship (1-6) Dental experience at an off-site location — not limited to clinical experience. Student participation must be approved by Associate Dean for Student and Academic Life.

INDD 690abcdef Directed Dental Research (1-12 each) Dental clinical and/or basic science research under faculty guidance; proposal developed, research conducted, conclusion drawn, paper written. Units determined by extent of research. Graded CR/NC.

INTERDISCIPLINARY — PRACTICE DYNAMICS (INTP)

INTP 501 Behavioral Strategies in Dentistry (2) Improvement of time and stress management and effectiveness in working with others; establishment of goals in dentistry; effective presentation of ideas. For Advanced Standing Program for International Dentists.

INTP 502ab Human Relations in Dental Practice (2-2) Introduction to behavioral concepts related to pain, fear, sedation; interviewing, treatment planning; care of geriatric and handicapped patients; patient education; includes principles of clinical application.

INTP 503ab Evaluation of Scientific Information in Clinical Practice (0-1) Practical guidelines for critically appraising scientific information applicable to the clinical practice of dentistry. Seminars will complement lectures with examples.

INTP 650 Dental Research Participation (1-6) Assist in research in basic science, biomedical, or clinical dental areas. Experience in research strategy, design and methods using practical scientific problem solving.

INTP 651 Experience in Dental Teaching (1-6) Practical teaching experience in dental laboratory and clinic settings under faculty supervision. Includes instruction in effective methods.

INTP 652 Externship (1-6) Dental experience at an off-site location — not limited to clinical experience. Student participation must be approved by Associate Dean for Student and Academic Life.

INTP 690 Directed Dental Research (1-12) Dental clinical and/or basic science research under faculty guidance; proposal developed, research conducted, conclusion drawn, paper written. Units determined by extent of research. Graded CR/NC.

INTERDISCIPLINARY — RESTORATIVE DENTISTRY (INTR)

INTR 503 Preclinical Diagnosis and Treatment Planning (2) Interdisciplinary course focusing on diagnosis and treatment planning through didactic course work and workshops which will include data collection/assessment, diagnosis and treatment planning methodologies, and specialty considerations.

INTR 524abcdef Clinical Practice (0-0-0-0-0-3, FaSpSm) The clinical component of existing didactic courses in Practice Management and Human Behavior. Graded IP.

INTR 550ab Introduction to Clinical Dentistry (0-1) Clinical operator preparation; asepsis and sterilization; preventive dentistry; introduction to physical evaluation, extra- and intra-oral examinations, treatment sequencing, dental specialty areas; includes clinical assisting.

INTR 551abcde Clinical Diagnosis and Treatment Planning (0-0-0-0-0-1) Large and small group seminars focusing on diagnosis and treatment planning involving multiple specialty case presentations; integrated therapy, contingency plans and case presentations will be included.

INTR 553abcdef Clinic: Diagnosis and Treatment Planning (0-0-0-0-0-2) Clinical experience in diagnostic procedures and treatment planning in care of dental patients. Includes student preparation of documentation of patient care and seminar.

INTR 652 Externship (1-6) Dental experience at an off-site location — not limited to clinical experience. Student participation must be approved by Associate Dean for Student and Academic Life.

INTR 690abcdef Directed Dental Research (1-12 each) Dental clinical and/or basic science research under faculty guidance; proposal developed, research conducted, conclusion drawn, paper written. Units determined by extent of research. Graded CR/NC.

INTERDISCIPLINARY — SURGICAL SCIENCES (INTS)

INTS 651abcd Experience in Dental Teaching (1-3, max 6) Practical teaching experience in dental laboratory and clinic settings under faculty supervision. Includes instruction in effective methods.

INTS 652 Externship (1-6) Dental experience at an off-site location — not limited to clinical experience. Student participation must be approved by Associate Dean for Student and Academic Life.

INTS 690abcdef Directed Dental Research (1-12 each) Dental clinical and/or basic science research under faculty guidance; proposal developed, research conducted, conclusion drawn, paper written. Units determined by extent of research. Graded CR/NC.

INTERDISCIPLINARY — DIAGNOSTIC SCIENCES (INTX)

INTX 501abcdeh Integrated Basic and Applied Science I (1-1-2-2-2-2-1) Principles of anatomy, histology, physiology, pathology applied to patient evaluation and management. Focuses on cell and connective tissue biology, neuromuscular, blood, endocrine and cardiovascular systems.

INTX 502abcdeh Integrated Basic and Applied Science II (1-1-2-3-1-2) Principles of anatomy, histology, physiology, pathology applied to patient evaluation and management. Focuses on respiratory, genito-urinary, gastrointestinal, hepato-biliary systems, oral biology, nutrition and hospital dentistry.

INTX 651abcd Experience in Dental Teaching (1-6 each) Practical teaching experience in dental laboratory and clinic settings under faculty supervision. Includes instruction in effective methods.

INTX 690abcdeh Directed Dental Research (1-12 each) Dental clinical and/or basic science research under faculty guidance; proposal developed, research conducted, conclusion drawn, paper written. Units determined by extent of research. Graded CR/NC.

MICROBIOLOGY AND IMMUNOLOGY (MBIO)

MBIO 310 Principles of Microbiology and Immunology (2) Fundamental concepts of microbiology and immunology. Bacterial, viral and fungal diseases are correlated with host responses; oral manifestations of infectious disease. Emphasis on sanitation and sterilization.

MBIO 501 Immunology (2) Fundamentals of immunology; basic immunopathology, especially concerning the oral cavity, including immunogenetics; hypersensitivities and inflammation; auto-immune diseases.

OCCUSION (OCCL)

OCCL 310 Fundamentals of Dental Morphology (1) Fundamentals of tooth form; carving of the permanent teeth.

OCCL 502 Occlusion (1) Principles of occlusion as related to clinical application of techniques and procedures to diagnose and treatment plan malfunctions of the stomatognathic system.

OCCL 521ab Dental Morphology and Function (3-2) Fundamentals of tooth form; principles of occlusion.

OCCL 522 Occlusion Laboratory (1) Laboratory experience in functional analysis and correction of occlusal disharmonies.

OCCL 601 Advanced Concepts of Occlusion (1) Historical perspective of occlusion; occlusal equilibration, effect of occlusal adjustment, instrumentation useful in occlusal therapy. Includes clinic and laboratory experience.

OROFACIAL PAIN ORAL MEDICINE (OFPM)

OFPM 701 CPR, Blood and Airborne Infections and Common Emergencies for Dental Residents (1, Sm) CPR training, review of common dental emergencies, and blood and airborne pathogens in dental patients.

OFPM 702ab Soft Tissue Disease for Dental Residents (a: 1, Sm; b: 2, Fa) Seminars on the various mucosal, cutaneous, gingival and salivary diseases and lesions in the oral and maxillofacial region.

OFPM 703 Local Anesthesia, Minor Surgery and Biopsy Procedures for Dental Residents (1, Sm) Seminars on local anesthesia methods and minor surgical procedures appropriate for the oral and maxillofacial region.

OFPM 704 Bony Pathology, Radiology and Advanced Imaging for Dental Residents (1, Sm) Review of the oral and maxillofacial region osseous and odontogenic pathologies and the various imaging methods used to examine this anatomic region.

OFPM 705 Neurogenic Based Oral and Facial Pains for Dental Residents (2, Sp) Seminars on the diagnostic and therapeutic procedures appropriate for chronic neurogenic based pain disorders that occur in the orofacial region.

OFPM 706 TMD, Orthopedics, Rheumatology and Physical Therapy for Dental Residents (2, Fa) Seminars on various topics relating to the diagnosis and management of Temporomandibular disorders.

OFPM 707 Pharmacology Series for Dental Residents (2, Fa) Seminars on common medications used in the practice of oral medicine and chronic orofacial pain.

OFPM 709 Headaches for Dental Residents (1, Sp) Seminars on the diagnosis, prevention and management (including pathophysiologic mechanisms) of episodic and chronic headache disorders.

OFPM 710ab Knowledge Assessment for OFPOM Residents (1-1, Sm) Assessment and feedback summarizing knowledge base acquired in online courses. Open only to master's students. *Recommended preparation:* OFPM 702b, OFPM 703, OFPM 704, OFPM 705, OFPM 706, OFPM 707, and OFPM 721.

OFPM 721 Neurosciences for Dental Residents (2, Fa) Seminars on the neurophysiologic and neuroanatomic bases of chronic orofacial pain disorders.

OFPM 722 Internal Medicine and Systemic Disease for Dental Residents (2, Sp) Seminars on common systemic diseases and the potential interactions with oral disease and treatment.

OFPM 723 Systems Physiology, Motor Disorders and Sleep Apnea for Dental Residents (2, Fa) Seminars on various topics relating to oral motor disorders and sleep disordered breathing (as it relates to the mandible and tongue.)

OFPM 724 Psychological and Psychometric Assessment for Dental Residents (2, Sm) Seminars on various topics relating to biobehavioral diagnosis and, where appropriate, psychological management of patients with chronic illness in the orofacial region.

OFPM 725 Epidemiology, Nutrition and Aging for Dental Residents (2, Sm) Seminar on the epidemiology of oral disease and nutritional topics as related to the aging patient.

OFPM 726 Immunology and Immunosuppression for Dental Residents (2, Fa) Seminar course on immunology and immunosuppression as it relates to diseases in the oral and maxillofacial region.

OFPM 727 Infectious Disease, Oral Microbiology and Virology for Dental Residents (2, Sm) Seminar organized around infectious diseases in the oral, pharyngeal and nasal region.

OFPM 728 Case Presentations by OFP-OM Residents (2, Sp) Case presentations by Orofacial Pain/Oral Medicine residents in which each resident presents and defends the diagnostic and treatment methods selected for a particular case.

OFPM 729abcd Capstone Project for OFPOM Residents (.5-.5-.5-.5, Fa) In the first three trimesters (OFPM 729abc) students will present their progress towards the final trimester (OFPM 729d) goal of defending their capstone research reports. Graded IP/NC/CR, with full credit on acceptance of the capstone research report. Open only to master's students.

OFPM 730abcde Case Portfolio Preparation by On-line OFPOM Residents (.5-.5-.5-.5-.5, Sm) In the first four trimesters (OFPM 730abcd) students will present their progress towards the final trimester (OFPM 730e) goal of defending a portfolio of 18 clinical cases. Graded IP/NC/CR with full credit on acceptance of final case portfolio. Open only to master's students.

ORAL MEDICINE ORAL DIAGNOSIS (OMOD)

OMOD 501 Emergency Dental Treatment (1) Dental emergencies in a general dental practice; emphasis on diagnosis of pain, trauma, infections, abscesses, myofacial problems, pulpal considerations, restorative goals; interrelationship of these areas.

OMOD 502 Chronic Orofacial Pain (2) Current concepts of pain mechanisms; application to differential diagnosis, treatment, and management of chronic head, neck, and dental pain.

OMOD 505 Oral Medicine (2) Detection, recognition, assessment, management and treatment modification of medical conditions presented by dental patients.

OMOD 506 Infection Control (1) Infection control and clinical asepsis in the dental office; ethical and legal aspects; specific agents of disease; epidemiology.

OMOD 551abcd Clinic: Physical Evaluation (0-0-0-1) Obtaining medical history, performing modified physical exams and clinical laboratory tests, establishing physical status. Understanding rationale and indications for modifying dental therapy; clinic and seminar.

OMOD 562abcd Clinic: Hospital Dentistry (0-0-0-1) Clinical experience in dentistry for the medically compromised and physically handicapped patient in a hospital environment.

OMOD 563abcde Clinic: Emergency Dental Treatment (0-0-0-0-0-1) Experience in management and treatment of emergency dental problems, including diagnosis of the pain cause, provision of appropriate therapy, and post operative instructions to the patient.

OPERATIVE DENTISTRY (OPER)

OPER 520 Preclinical Operative Dentistry (ISP) (3) Preparation for clinical work through study of fundamentals of cavity design and restoration of cavity preparations on extracted teeth mounted in a manikin.

OPER 521ab Preclinical Operative Dentistry I (1-3) Introduction to terminology, materials, and instruments used in operative dentistry; fundamentals of amalgam restoration; principles of cavity preparation; amalgam manipulation, condensation, and carving using extracted teeth.

OPER 522 Preclinical Operative Dentistry II (3) Fundamentals of cavity design; restoration of cavity preparations on extracted teeth mounted in the manikin.

OPER 561abcd Clinic: Operative Dentistry I (0-0-0-6) Clinical experience treating patients using all modalities of operative dentistry.

OPER 562ab Clinic: Operative Dentistry II (0-6) Clinical experience treating patients using all modalities of operative dentistry.

OPER 620 Conservative Cast Gold Restorations (2) Principles of cavity preparation, fabrication technique and finishing for conservative cast gold restorations; includes lab and clinic.

OPER 701ab Seminar: Advanced Operative Dentistry I (2-2, Fa) In-depth study of the biomechanics applied to cavity preparation according to material selection, bonding procedures, and protection of the pulp-dentin. Graded CR/NC. Open only to Advanced Operative Dentistry Certificate students.

OPER 702abL Advanced Dental Morphology for Esthetic Restorations (a: 3, Sm; b: 3, Fa) In-depth study of the dental morphology, dental optical properties, and laboratorial procedures for restorative replication of esthetical and morphological aspects found in the natural tooth. Graded CR/NC. Open only to Advanced Operative Dentistry Certificate students.

OPER 705L Dental Photography (1, Fa) Basic principles of dental photography and its use in clinical dentistry for shade selection, replication of dental esthetic components, and clinical case documentation. Graded CR/NC. Open only to Advanced Operative Dentistry Certificate students.

OPER 710abcdeh Seminar: Advanced Operative Dentistry II (1-1-1-1-1-1, FaSpSm) Advanced knowledge and scientific background of the principles of adhesion to dental structures and analysis of bonding effectiveness of different adhesive methods and bonding degradation. Graded CR/NC. Open only to Advanced Operative Dentistry Certificate students.

OPER 720abcdeh Seminar: Advanced Operative Dentistry III (1-1-1-1-1-1-1, FaSpSm) Advanced studies, technical, and scientific background of esthetic bonded direct restorations with in-depth analysis of mechanical, physical, and optical properties of resin composite restorations. Graded CR/NC. Open only to Advanced Operative Dentistry Certificate students.

OPER 730abcd Seminar: Advanced Operative Dentistry IV (1-1-1-1, FaSpSm) In-depth study, analysis, and treatment involved in the management of discolored and developmental defects of the teeth. Graded CR/NC. Open only to Advanced Operative Dentistry Certificate students.

OPER 740abc Seminar: Advanced Operative Dentistry V (2-2-2, FaSpSm) Cariology and proficiency of dental caries management using preventive methods and minimally invasive restorative techniques. Graded CR/NC. Open only to Advanced Operative Dentistry Certificate students.

OPER 750abc Seminar: Advanced Operative Dentistry VI (2-2-2, FaSpSm) Advanced studies of restorative techniques of severely damaged teeth, selection and use of different post systems, core build-up, and bonding to the root canal. Graded CR/NC. Open only to Advanced Operative Dentistry Certificate students.

OPER 760abcdeh Seminar: Advanced Operative Dentistry VII (1-1-1-1-1-1-1, FaSpSm) Proficiency in advanced esthetic indirect restorations for anterior and posterior teeth, including preparation designs, material selection, cementation and bonding procedures, and alternative resin-bonded fixed-partial dentures. Graded CR/NC. Open only to Advanced Operative Dentistry Certificate students.

OPER 765abcd Seminar: Advanced Operative Dentistry VIII (1-1-1-1, FaSpSm) Advanced studies of computer-generated restorations (CAD/CAM) and digital imaging in dentistry for anterior and posterior teeth. Graded CR/NC. Open only to Advanced Operative Dentistry Certificate students.

OPER 770abcdehL Scientific Investigation in Operative Dentistry (1-3, max 14, FaSpSm) Enhancement of critical research thinking by development and experimentation of different scientific methodologies in operative dentistry, journal article writing and submission for publication. Graded CR/NC. Open only to Advanced Operative Dentistry Certificate students.

OPER 780abcde Treatment Planning in Operative Dentistry (2-2-2-2-2-2, FaSpSm) Seminars led by students and invited guests to discuss, analyze and propose a treatment sequence for esthetic challenge clinical cases involving complex multidisciplinary treatment. Graded CR/NC. Open only to Advanced Operative Dentistry Certificate students.

OPER 795abcdehij Clinic: Advanced Operative Dentistry (1-3, max 14, FaSpSm) Advanced clinical and laboratorial treatment of patients in need of complex multidisciplinary treatment, with special emphasis on esthetic and bonded restorations. Graded CR/NC. Open only to Advanced Operative Dentistry Certificate students.

ORTHODONTICS (ORTH)

ORTH 501ab Seminar: Orthodontics (0-1) Clinical use of cephalometrics and orthodontic prediction; removable orthodontic appliances and their design; case analysis; mixed dentition cases; adult tooth positioning; orthodontic banding; molar uprighting.

ORTH 521 Preclinical Orthodontics (2) Evaluation, prevention, and treatment of dento-facial malformations. Construction of basic appliances to treat orthodontic problems encountered by the general practitioner.

ORTH 561abcde Clinic: Orthodontic Therapy (0-0-0-0-0-2) Diagnosis and limited treatment of orthodontic problems encountered in general practice. Diagnosis of complex orthodontic problems requiring treatment by a specialist. *Prerequisite:* ORTH 521 for a; a before b, etc.

ORTH 674 Clinical and Molecular Bone Biology (2, Sp) Explore the impact of the application of new molecular techniques to bone biology research on our understanding of osteoporosis, osteosarcoma, hypercalcemia, etc. Open to advanced program students in dentistry only.

ORTH 701ab Cephalometrics: Growth and Development (2-4; 2-4) Principles and mechanics; measurement techniques; developmental morphology; analysis and diagnosis; treatment rationales; gross radiological anatomy and osteology; facial growth. Hours vary.

ORTH 702 Seminar: Review of the Orthodontic Literature (5) Two trimester Course Review of current orthodontic literature.

ORTH 703abcdeh Seminar: Advanced Orthodontics (2-8 each, FaSpSm) Advanced diagnosis and treatment of complex orthodontic cases. Asymmetrical treatment. Hours vary.

ORTH 704abc Seminar: Orthodontics in Theory and Practice (2-2-2) Review of various approaches to orthodontic treatment; includes presentation of cases.

ORTH 705abc Orthodontic Practice Management (2-2-2, FaSpSm) Office management and patient relations in orthodontic practice.

ORTH 706 Surgical Orthodontics (2) Diagnosis, treatment, prognosis, and management of orthognathic problems. Lecture and demonstration, 2 hours.

ORTH 707 Interdisciplinary Aesthetic Treatment (2, Sp) Commonly encountered interdisciplinary aesthetic problems. Communication and teamwork between orthodontists and general dentists, as well as other specialists will be emphasized.

ORTH 708 Information Technology in Orthodontic Practice (2, Fa) Practical applications of information technology in contemporary orthodontics. Topics include office management systems, videocephalometrics, and video imaging in orthodontic practice.

ORTH 709 Advanced Information Technology in Orthodontic Practice (2, Sm) Follows ORTH 708 and is designed to provide background and up-to-date information on advanced technologies in orthodontic practice.

ORTH 721 Biomechanics and Orthodontic Technique (8) Primary orthodontic techniques and basic diagnostic procedures. Typodont treatment of malocclusion, record taking, retention appliances, and beginning biomechanics.

ORTH 751abcdeh Clinic: Advanced Orthodontics (1-10 each, FaSpSm) Clinical orthodontics; clinical techniques, diagnostic procedures, and applied clinical therapy to selected cases of malocclusion with emphasis on therapy and supervised treatment.

ORTH 791 Library Research (1-6) Organized literature searching and compiling of published data for purposes of developing writing and investigative skills.

PATHOLOGY (PTHL)

PTHL 312abc Medicine and Pathology (1-3-2, FaSpSm) An integrated approach to clinical, gross and microscopic study of basic disease processes, systemic pathology, oral pathology, internal medicine, pathophysiology, physical evaluation and emergency medicine for significant organ systems. Clinical-pathologic correlation stressed. Evaluation, classification, and differential diagnosis of oral lesions; disease recognition and dental treatment modification.

PTHL 501 Oral Pathology (4, Sm) Clinical radiographic, gross and microscopic characteristics of mucosal, skin, fibrous and salivary gland diseases; odontogenic tumors and cysts; benign and malignant neoplasms and iatrogenic conditions.

PTHL 504ab Seminar: Oral Pathology (0-0) Clinicopathologic discussion of oral pathosis cases. A variety of "unknown" cases representing diagnostic problems are analyzed. Etiology, pathogenesis, clinical/radiographic features, therapy and prognosis are stressed.

PTHL 601 Advanced Oral Pathology Seminar (2) Detailed discussion and analysis of many cases representing a wide variety of oral pathologic conditions stressing differential diagnosis and clinical-pathologic correlations.

PTHL 701 Clinicopathologic Conference (3-12) Clinicopathologic correlation of diseases of the head and neck. Seminar, 1 hour. Presented at LAC+USC Medical Center.

PEDIATRIC DENTISTRY (PEDO)

PEDO 310 Principles of Dentistry for Children (1) Role of the dental hygienist in dental care for the child patient. Principles of pediatric dentistry as related to education of the child patient and the parent. Lecture, 1 hour.

PEDO 501 Clinical Pediatric Dentistry (1) Scientific principles underlying contemporary pediatric dentistry, including prevention of disease; dental anomalies; habits and other problems in occlusal development; behavior management; child abuse.

PEDO 521 Preclinical Pediatric Dentistry (2) Principles and techniques of cavity preparations in primary teeth; pulpal therapy; stainless steel crowns; space maintenance; diagnosis, treatment planning.

PEDO 551abc Clinic: Dentistry for Children I (0-0-2) Structured clinical experience in caring for the dental needs of the child patient. Includes special case seminars.

PEDO 561abc Clinic: Dentistry for Children II (0-0-1) Dental treatment of the child patient; preventive and restorative dentistry; space maintenance and interceptive orthodontic procedures.

PEDO 701ab Seminar: Advanced Pediatric Dentistry (8-15 each, FaSpSm) Discussions of literature related to pediatric dentistry. Biologic considerations in operative dentistry, odontogenesis, dental trauma, physiology of occlusion, pulpal biology. Graded CR/NC.

PEDO 702ab Comprehensive Review of Pediatric Dentistry (5-7 each, FaSpSm) Critical analysis of current pediatric dentistry literature and case conferences related to the application of contemporary issues in dentistry for the complex child patient.

PEDO 703abcde Interceptive Orthodontics (2-5 each) Recognition, evaluation, and treatment of developing orthodontic problems appropriate to the pediatric dentist; emphasis on diagnosis; laboratory experience included.

PEDO 704ab Prevention in Pediatric Dentistry (2-2) Discussions and readings pertaining to the analysis and incorporation of the many components of prevention into the contemporary pediatric dentistry practice.

PEDO 705 Pediatric Diseases (2) Discussion of medical conditions seen by the pediatric dentist in the hospital environment. Conditions include childhood cancer, HIV, heart disease, diabetes mellitus and blood dyscrasias. Graded CR/NC.

PEDO 706 Dental Care for Pediatric Patients with Disabilities (2) Medical, dental, psychological, and social problems of children with developmental disabilities; effect of problems on delivery of pediatric dentistry. Graded CR/NC.

PEDO 707 Seminar: Cleft Palate Rehabilitation (1-9) Three trimester course discussions and case conferences related to treatment of patients with oral and facial anomalies: includes interceptive and corrective orthodontics, preventive and restorative treatment, and selected oral surgery-prosthetic rehabilitative procedures. Seminar, 3 hours.

PEDO 708 Practice Management (1, FaSpSm) Discussion of issues related to the contemporary practice of pediatric dentistry (seminars and office visitations). Topics include: purchasing a practice, associateships, hospital affiliations, practice administration and marketing, computers, jurisprudence and auxiliary utilization.

PEDO 709 Conscious Sedation in Pediatric Dentistry (1, Sm) Seminar topics include: review of pharmacology and effectiveness of commonly used oral agents, methods of administration, regulatory guidelines, patient monitoring, management of sedation related emergencies.

PEDO 721 Pediatric Physical Evaluation (2) Assessment of patient health status; evaluation and management of acute and chronic disease states which may be observed in the pediatric dental practice.

PEDO 761abcde Clinic: Advanced Pediatric Dentistry (2-10 each, FaSpSm) Clinical application of advanced pediatric dentistry techniques in routine and special problem cases in the outpatient environment. Hours vary. Graded CR/NC.

PEDO 771abcdef Clinic: Hospital Pediatric Dentistry (2-15 each, FaSpSm) Treatment of the child patient in the hospital environment. Emphasis placed on treatment and management with physical, mental, or emotional disabilities.

PEDO 772abcde Clinic: Interceptive Orthodontics (1-3 each) Clinical application and treatment procedures for tooth guidance, preventative and interceptive orthodontics.

PEDO 773 Hospital Pediatric Clinics (2-4) Observation and participation in affiliated hospital clinics: anesthesiology, hematology, and genetic clinics; grand pediatric rounds and other conferences.

PEDO 774 Clinical Genetics in Pediatric Dentistry (9) Genetic principles of oral, facial and cranial malformations; technique and theory of clinical genetics, differential diagnosis and treatment of disorders of the craniofacial complex.

PEDO 790ab Directed Research: Pediatric Dentistry (1-6 each) An examination and analysis of clinical and laboratory problems in dentistry for children leading to completion of an original research project. Graded CR/NC.

PERIODONTICS (PERI)

PERI 310ab Introduction to Periodontal Diseases (1-1, FaSp) Introduction to periodontal disease; emphasis on identification of normal periodontium, distinguishing of gingival and periodontal diseases; includes data collection and classification of gingival and periodontal diseases.

PERI 415 Basic Periodontal Therapy (1) Basic therapeutic modalities of periodontal treatment; general principles and methods of surgical periodontal treatment.

PERI 502 Periodontal Diseases and Elements of Therapeutic Judgment (2) Periodontal pathologic processes; pathogenesis, classification and clinical features of gingivitis; periodontitis; other related diseases of periodontium including diagnosis and initial phases of treatment.

PERI 504 Advanced Periodontics (1) Periodontics as related to endodontics, orthodontics, and restorative dentistry; bone induction, osseous grafting, splinting, management of furcation lesions; maintenance, recall, and referral.

PERI 521 Periodontal Surgery (2) General principles and methods of surgical periodontal treatment; includes laboratory exercises.

PERI 550ab Clinic: Introductory Periodontal Therapy (1-1) Laboratory and clinical development of periodontal therapy procedures; basic instrumentation principles.

PERI 561abcd Clinic: Periodontal Therapy I (0-0-0-1) Supervised treatment of periodontal disease at all levels of complexity.

PERI 562ab Clinic: Periodontal Therapy II (0-2) Supervised treatment of periodontal disease at all levels of complexity.

PERI 602 Current Controversies in Periodontology (2) Examination of the major controversies in the field of periodontology; emphasis on the efficacy of current treatment modalities and future trends.

PERI 603abc Advanced Periodontal Surgery (0-0-2) Surgical management of more complex osseous and muco-gingival defects.

PERI 701ab Seminar: Review of Current Periodontal Literature (2-3) Review and critical evaluation of the current periodontal literature.

PERI 702ab Seminar: Periodontal Treatment Procedures (2-2) Presentation of various techniques in current periodontal treatment.

PERI 703ab Seminar: Periodontal Case Presentation (1-2) Formalized presentation and discussion of clinical cases treated by advanced students.

PERI 704abcdehij Seminar: Periodontal Therapy (2 each) Presentation and discussion of treatment of clinical cases involving soft tissue and osseous management; rationale for the therapy; surgical wound healing; dental implant surgery.

PERI 708 Seminar: Clinical Basis of Periodontics (4) Evaluation of the literature dealing with various types of therapy including the objectives of treatment.

PERI 710 Clinical Periodontal Photography (1) Demonstration of techniques used in intraoral photography for periodontal purposes, emphasis on proper clinical case documentation in seminar presentation and Specialty Board Certification.

PERI 711 Occlusal Therapy in Periodontics (2) Anatomy of the TMJ mandibular movements; occlusal anatomy and their interrelationships; methods of occlusal correction using anatomy and mandibular movements as a guide.

PERI 713abcdehij Treatment Planning in Periodontics (2 each) Presentation of clinical findings, diagnoses, and plan of treatment of clinical cases by advanced students.

PERI 715 Treatment of Special Care Patients (3) Periodontal care and treatment of older population groups, handicapped patients, and other types of special patients, settings, and situations.

PERI 716ab Seminar: Special Topics in Periodontal Disease (3-3) Discussion of topics of immediate importance and controversy. Experts in the field are invited to participate as guest speakers.

PERI 750 Advanced Periodontal Instrumentation (3) Advanced root preparation techniques including design and manufacturing characteristics of various instruments, sharpening techniques, and root morphology as it relates to advanced instrumentation principles.

PERI 752 Interdisciplinary Treatment: An Orthodontic Perspective (2) Effective recognition, evaluation and understanding of the orthodontic treatment phase required in interdisciplinary treatment plans; includes laboratory and clinical experience; applicable to orthodontics, periodontology, prosthodontics.

PERI 761abcdehij Clinic: Advanced Periodontics (1-10 each) Clinical experience in the treatment of patients with all types and degrees of involvement of periodontal disease. Includes placement of dental implants. Graded CR/NC.

PERI 771ab Periodontal Therapy in the Hospital (1-1) Role of the periodontist in hospital therapy. Treatment of complex cases in the hospital environment.

PERI 790ab Directed Research: Periodontics (1-6 each) Research in clinical and experimental periodontology. Graded CR/NC.

PHARMACOLOGY (DPHR)

DPHR 410 Principles of Pharmacology (2) Basic principles of drug action; application of drugs in the prevention and treatment of disease; harmful effects of drugs on biological systems. Lecture, 2 hours.

DPHR 501 Pharmacology (3) General principles of drug action: prescription writing; toxicology; pharmacology of drugs affecting cardiovascular, autonomic, endocrine, and central nervous systems; drug control of pain, anxiety, infection.

DPHR 601 Clinical Drug Therapy in Dentistry (2) Clinical pharmacology of drug therapy important to dental practice using case history disease signs and symptoms and attendant drug therapy.

DPHR 701 Advanced Pharmacology (1) Pharmacologic principles and practice of drug use to control anxiety, pain, and infection. Treatment of drug and medical emergencies as they relate to dental specialty practice.

RESTORATIVE DENTISTRY (REST)

REST 314 Physiology of Occlusion for Hygienists (1) Biology and function of the gnathostomatic system. Role of the hygienist in diagnosis and treatment of occlusal dysfunctions.

REST 501 Preclinical Operative and Fixed Prosthodontics (Conjoint) (2) Fundamental concepts of restoring an individual tooth with a cast restoration; principles of cavity preparation; casting fabrication and cementation.

REST 503ab Clinical Restorative Dentistry (1-1) Application of pre-clinical procedures in operative dentistry, fixed prosthodontics, removable prosthodontics, and dental materials.

REST 504 Diagnosis and Treatment Planning (1) Utilizing a restorative approach, enhance students' knowledge and ability to choose treatment best suited for existing dental conditions, patients' requests and their financial ability.

REST 521 Preclinical Operative/Fixed Prosthodontics Laboratory (3) Experience in cavity preparation; casting fabrication and cementation on extracted teeth and plastic dentiforms.

REST 522 Aesthetics in Dentistry (1) Definition and relationship of elements of aesthetics; application in patient motivation and care.

REST 553ab Seminar: Review of Literature in Restorative Dentistry (2-2) Critical evaluation of classical literature in restorative dentistry.

REST 602ab Participation in Advanced Dental Care (0-3) Participation in advanced dental treatment in Faculty Private Practice Clinic, techniques of difficult case presentation and efficiency in practice. Clinic and seminar.

REST 701 Orientation to Advanced Prosthodontics (5) Preclinical overview of materials, techniques, instrumentation, and treatment procedures necessary for providing advanced prosthodontic care in the clinical environment.

REST 702abcdeh Seminar: Treatment Planning (2 each) Seminars led by students with case presentations of complex multidisciplinary treatment plans, completed therapy and staff conferences.

REST 703abcdeh Seminar: Review of the Prosthodontic Literature — Fixed (1 each) Weekly two hour seminars devoted to review of the historic, classic, and current literature in fixed prosthodontics.

REST 704abcdeh Seminar: Review of the Prosthodontic Literature — Removable (1 each) Weekly two hour seminars devoted to review of the historic, classic, and current literature in removable prosthodontics.

REST 705 Advanced Fixed Prosthodontics Techniques (1) Tooth preparation and advanced laboratory techniques necessary to implement full mouth rehabilitation.

REST 706 Advanced Complete Denture Techniques (1) Advanced laboratory and clinical skills for a specialty prosthodontic practice.

REST 708ab Dental Ceramics, Color, and Aesthetics (2-2) Theory of color and dental aesthetics; history and development of dental ceramics; design and techniques in fabrication of ceramo-metal restorations.

REST 709ab Seminar: Removable Partial Dentures (1-2) Diagnosis, treatment planning, and design of removable partial dentures using extracoronal and intra-coronal retainers.

REST 710abcd Implant Dentistry (1-1-1-1) Implant modalities and types; basis for selection; techniques of placement and of supervision of prosthodontic restoration. Includes a review of classic implant literature.

REST 712 Maxillofacial Prosthodontics (2) Theory and techniques for fabrication of prostheses to correct maxillofacial deformities including cleft palate.

REST 721ab Principles of Occlusion (2-2) Application of current occlusal concepts in removable prosthodontics. Techniques of occlusal adjustment and additive waxing for development of occlusal morphology.

REST 761abcdehij Clinic: Advanced Prosthodontics (1-10 each) Students treat patients with complex interdisciplinary problems. A minimum of five full mouth reconstructions and 10 sets of complete dentures will be completed.

REST 781 Clinic: Maxillofacial Prosthetics (1-8) Clinical experience in fabrication of prostheses to correct maxillofacial deformities.

REST 782abcde Clinic: Implant Prosthodontics (1-10 each) Clinical procedures in implants for prosthodontic rehabilitation.

REST 790 Directed Research: Prosthodontics (1-12) Opportunities for research in clinical and experimental prosthodontics. Graded CR/NC.

REMOVABLE PROSTHODONTICS (RPRO)

RPRO 501 Preclinical Removable Complete Prosthodontics (1) Fundamental theory for the fabrication of removable complete dentures.

RPRO 502 Removable Complete Prosthodontics (1) Complete denture treatment: phases, clinical procedures, philosophy, concept, rationale, and need.

RPRO 503ab Preclinical Removable Prosthodontics and Implants (2-1) Introduction to disciplines of removable complete and partial dentures and implants, including classification and progress of edentulism, support sources and principles, design, fabrication and evaluation.

RPRO 510 Implant Dentistry (1) Principles and use of implants in dentistry: includes history, biological basis, types, diagnosis and treatment planning, surgical and restorative procedures, and limitations.

RPRO 511 Preclinical Removable Partial Prosthodontics I (1) Partial denture diagnosis and treatment planning; basic principles of partial denture design, fabrication, and function.

RPRO 512 Preclinical Removable Partial Prosthodontics II (1) Partial denture design, fabrication, and function; repair; patient education.

RPRO 513 Removable Partial Prosthodontics (1) Clinical removable partial prosthodontic treatment including diagnosis, treatment planning and clinical techniques.

RPRO 521 Preclinical Removable Complete Prosthodontics Laboratory (1) Fundamental theory for the fabrication of removable complete dentures.

RPRO 523ab Preclinical Removable Prosthodontics and Implants Laboratory (1-1) Laboratory experience in the fabrication of removable complete and partial dentures and implants.

RPRO 532 Preclinical Removable Partial Prosthodontics Laboratory II (1) Laboratory experience in fabrication of removable partial dentures.

RPRO 550 Removable Complete Prosthodontics Clinic I (1) Clinical demonstration with supervised clinic experience in construction, repair, and evaluation of the removable complete denture.

RPRO 561abcd Clinic: Removable Complete Prosthodontics I (0-0-0-2) Diagnosis, treatment planning, and care of edentulous patients. Complex cases involving temporo-mandibular joint dysfunction, surgical and congenital defects; seminars on clinical treatment.

RPRO 562ab Clinic: Removable Complete Prosthodontics II (0-3) Diagnosis, treatment planning, and care of edentulous patients. Complex cases involving temporomandibular joint dysfunction, surgical and congenital defects; seminars on clinical treatment.

RPRO 571abcde Clinic: Removable Partial Prosthodontics (0-0-0-0-0-2) Clinical experience in diagnosis, treatment planning, and laboratory procedures necessary for the treatment of the partially edentulous patient. Includes seminars related to clinical treatment.

RPRO 602 Advanced Removable Prosthodontics (4) Critical review and evaluation of the removable prosthodontic literature; guided experience in the laboratory and clinical phases of removable prosthodontic therapy. (Duplicates credit in 604abc.)

RPRO 603 The Edentulous Patient — Conventional or Implant Prosthesis (1) Effective management of the edentulous patient who is unable to adapt to a prosthesis; includes a review of implant dentistry with a hands-on session.

RPRO 604abc Advanced Removable Prosthodontics (o-o-4) Critical review and evaluation of the removable prosthodontic literature; guided experience in the laboratory and clinical phases of removable prosthodontic therapy. (Duplicates credit in 602.)

RPRO 605 Prosthodontic Seminar: Removable Partial Prosthodontics (1) Provides fourth year dental students with an advanced didactic foundation for treating the partially edentulous patient with a removable partial.

RPRO 655abc Dental Implants (o-o-4) Overview of surgical and prosthodontic implant treatment concepts and modalities; laboratory and clinic experience in fabrication and placement of implant retained prostheses.

ORAL SURGERY (SURG)

SURG 501 Oral Surgery (2) Introduction to surgical dentistry, armamentarium and procedures; exodontics; infection; post operative care; repair of bone and soft tissue; acute injury; cysts, sinuses, nerve injury, biopsy.

SURG 562abc Clinic: Oral Surgery I (o-o-1) Supervised clinical experience in health history, surgical evaluation, extraction of teeth, and minor oral surgery procedures. Includes special case seminars.

SURG 563abc Clinic: Oral Surgery II (o-o-1) Supervised clinical experience in health history, surgical evaluation, extraction of teeth, and minor oral surgery procedures. Includes special case seminars.

SURG 564abcd Clinic: Hospital Oral Surgery (o-o-o-1) Observation of inpatient and outpatient oral and maxillofacial surgery, participation in clinic care of patients with dento-alveolar pathology, introduction to management of medically compromised patient.

SURG 611abc Oral and Maxillofacial Surgery (o-o-4) More advanced instruction in oral and maxillofacial surgery and related diseases as appropriate to the practice of general dentistry; extensive clinical experience.

SURG 701ab Seminar: Advanced Oral Surgery (2-2) Problems in advanced oral surgery and hospital oral surgery including student presentations and critique of clinical cases.

SURG 702ab Seminar: Review of the Oral Surgery Literature (2-2) Critical analysis of recent oral surgery and other related literature.

SURG 708ab Orthognathic Surgery (a: 2, Fa; b: 2, Sp) Surgical planning and treatment of patients with skeletal deformities.

SURG 721 Surgical Anatomy (2) Intensive review of anatomy relevant to the practice of oral surgery. Includes dissections and animal surgery.

SURG 761abcd Clinic: Advanced Oral Surgery (1-10 each) Clinical evaluation and surgical treatment of dento-alveolar disease in out-patient clinic.

SURG 763abcd Clinic: Advanced Hospital Oral Surgery and Anesthesia (1-10 each) Surgical treatment of patients and service in medical anesthesia at the LAC+USC Medical Center.

USC School of Dramatic Arts



*The USC School of Dramatic Arts produced two dozen shows in 2012–13, including classics like Anton Chekhov's *The Cherry Orchard* and modern spin-offs like *A Midsummer Saturday Night's Fever Dream*. Here Christopher Bautista and Briana Henry play pioneers in *Flyin' West*, a play that tells the story of the thousands of African-Americans that headed west in the mid-1800s hoping to own land and become equal citizens.*

One of the premier dramatic arts schools in the United States, the USC School of Dramatic Arts provides the necessary education and training for graduates to excel in the professional arts and related fields, which offers an ideal foundation to a liberal education that prepares students for a wide range of career interests. The school promotes and supports innovative and flexible ways to achieve students' educational and professional goals.

The dramatic arts are both a collaborative endeavor and a universal means of communication. The school educates students in the history of theatre, while preparing them to add to that history, to use their talents, skill and imagination to explore the limitless possibilities the dramatic arts offer.

The USC School of Dramatic Arts is significantly enhanced by its location in Los Angeles, the entertainment capital of the world. Theatre professionals frequently teach seminars, mentor students and participate in School of Dramatic Arts productions.

Graduates of the school work professionally in all aspects of theatre, film and television. The school's performance and design faculty are dynamic teachers who also regularly work in the theatre and entertainment industry.

The breadth of learning opportunities offered at the school prepares students for the spectrum of careers in the professional theatre, including performance, production, design, sound design, management and teaching. The School of Dramatic Arts also strives to instill confidence, integrity, excellence and artistic sensitivity into each of its students — traits that are essential to success in any field.

Drama Center 104
(213) 740-1286
FAX: (213) 740-8888
Email: info@sda.usc.edu
dramaticarts.usc.edu

Administration

Madeline Puzo, *Dean*
 Sharon M. Carnicke, Ph.D., *Associate Dean*
 Velina Hasu Houston, Ph.D., *Associate Dean*
 Jack R. Rowe, *Associate Dean*

Faculty

Professors: Sharon M. Carnicke, Ph.D.; Velina Hasu Houston, Ph.D.

Associate Professors: Meiling Cheng, DFA; Oliver Mayer, MFA

Assistant Professors: Luis Alfaro; Angus Fletcher, Ph.D.; Christina Haatainen-Jones; Takeshi Kata; Tom Ontiveros, MFA; Sibyl Wickersheimer, MFA

Professors of Theatre Practice: Andrei Belgrader; Natsuko Ohama; Andrew J. Robinson

Associate Professors of Theatre Practice: Paul Backer, Ph.D.; Brent Blair, M.A.; David Bridel; Elsbeth M. Collins; Joseph Hacker, MFA; Duncan Mahoney; Mary-Joan Negro; Jack R. Rowe; Stephanie Shroyer, MFA; Eric Trules

Assistant Professors of Theatre Practice: Philip G. Allen; Anita Dashiell-Sparks, MFA; David Warshofsky

Adjunct Faculty: Tony Abatemarco; Joe Anthony; Robert Bailey; Corbett Barklie; Joe Bays; Jason Robert Brown; Tom Budenwitz; Anne Burk; Frank Catalano; Julian S. Cha; Stacie Chaiken; Paula Cizmar; Anastasia Coon, MFA; Debra DeLiso; John DeMita; Barbara Dodge, MFA; Kathleen S. Dunn-Muzingo; Frank Dwyer; Kiyomi Emi; Dan Fishbach; Laura Flanagan; Jeff Flowers; Parmer Fuller, Ph.D.; Julianne Gale, M.A.; Terry Gordon; Elizabeth Hogan; Paula Holt; Michael Keenan; Mary K. Klingner; Shishir Kurup; Edgar Landa; Vicki Lewis; Helene Lorenz; Heather Lyle, M.M.; Susan Main; Marjo-Riikka Makela, MFA; Babette Markus; Kevin McCorkle; Laural Meade; Randy Mell; Ntare Guma Mbaho Mwine, MFA; Leah Piehl; Ron Popenhagen, Ph.D.; John Rubinstein; Colin Sieburgh, M.Arch.; Doug Tompos; Ella Turenne; Laura Vena; Matt Walker; Julie Welch

Emeritus Professors: Eve Roberts, MFA; Robert R. Scales, Ph.D.; James Wilson, MFA

General Information

Degree Programs

The School of Dramatic Arts offers professional and academic degrees at the Bachelor and Master of Fine Arts levels as well as a Master of Arts in Applied Theatre Arts. USC offers two degree programs to undergraduate students interested in the study of theatre arts. The professional degree programs, the Bachelor of Fine Arts

(BFA) in Acting, Design/Technical Direction, Sound Design, and Stage Management, offer a conservatory approach to training for students committed to pursuing careers in the professional theatre, film and television industries. The Bachelor of Arts degree program (B.A.) incorporates a broad, general education in addition to a thorough study of drama. The Bachelor of Arts in Visual and Performing Arts Studies provides students with a broad understanding of the various disciplines. The School of Dramatic Arts also offers minor programs in applied theatre arts, theatre, musical theatre, performing arts studies and playwriting.

Bachelor of Arts

The Bachelor of Arts (B.A.) degree is ideal for students who want a broad education in addition to production and performance experience. The degree is offered in cooperation with the USC Dornsife College of Letters, Arts and Sciences.

Bachelor of Fine Arts

Acting: The BFA acting degree is a four-year professional training program with opportunities for performances beginning with the sophomore year. The program comprises an integrated sequence of training in acting, voice and body movement, based on the belief that an actor's emotional and imaginative abilities cannot be released without control over vocal and physical resources. This training is combined with course work in critical and historical studies, stagecraft, technical theatre, scenic design, costume and lighting. An audition is required for admission. The BFA acting program is highly competitive.

Design/Technical Direction: The BFA program in design/technical production offers two areas of study: design — incorporating study in scenic, lighting and costume design; and technical production — incorporating the study of theatrical design with training in the professional skills needed to execute stage designs. An interview is required for admission.

Sound Design: The BFA program in sound design offers the student a combination of technical, management and design training in sound design. The student is also introduced to sound recording and mixing through a series of courses offered by the USC Thornton School of Music. Students begin using this training as early as the second semester of the second year of enrollment. The skills acquired in the classroom are further explored through sound design assignments on School of Dramatic Arts public productions in each subsequent semester of the student's program. Students in the sound design program build and design the sound component for the majority of the School of Dramatic Arts' productions under the supervision of a professional staff of designers and theatre technicians. An interview is required for admission.

Stage Management: The BFA program in stage management offers the student a combination of technical, management and design training. Students begin using this training as early as the first year of enrollment. The skills acquired in the classroom are further explored through stage management assignments in each year

of the student's program. An interview is required for admission.

Students in the design/technical production and stage management programs design, build and stage manage the majority of the School of Dramatic Arts' productions under the supervision of a professional staff of designers and theatre technicians.

Bachelor of Arts in Visual and Performing Arts Studies

The Bachelor of Arts in Visual and Performing Arts Studies is an interdisciplinary degree offered jointly by the School of Dramatic Arts, the School of Architecture, the School of Cinematic Arts, the Roski School of Fine Arts, the Thornton School of Music, and the Dornsife College of Letters, Arts and Sciences.

Minor Programs

Theatre This general minor in theatre invites students to explore the many facets of this exciting field. Students have the opportunity to take a variety of classes in acting, applied theatre arts, applied theatre arts/education, playwriting, literature, stage management, directing, costume design and production. The curriculum is very flexible and encourages students to develop a primary interest for upper-division course work. All minor students are eligible to participate in performance and production projects.

Applied Theatre Arts The minor in applied theatre arts addresses the theory and practice of applying theatre arts in non-traditional settings with emphases that include education, therapy and social change.

Musical Theatre The minor in musical theatre, interdisciplinary in nature, is a 27-unit program incorporating the study of acting, dance or movement, vocal arts and related musical subjects presented in association with the Thornton School of Music.

Performing Arts Studies The minor in performing arts provides an interdisciplinary inquiry into the nature and aesthetics of the performing arts. It combines the disciplines of cinematic arts, dance, music and theatre. The minor is a unique course of study that looks at how the performing arts contribute to a culturally literate society.

Playwriting The minor in playwriting presents undergraduate students who are not theatre majors with a concentration in the discipline of playwriting as a means for broadening and deepening expression using the literary and performing arts. This minor offers a foundation for extended expression in dramatic writing and creative writing genres in general.

Master of Fine Arts

The Master of Fine Arts with a major in theatre requires 48–64 units of course work at the 400 or 500 level. The areas of emphasis include acting, theatrical design, dramatic writing and directing. These programs provide a high level of practical experience. To ensure this, the number of students accepted in each area of emphasis is strictly limited. An interview is required for admission.

Master of Arts, Applied Theatre Arts

The Master of Arts in Applied Theatre Arts explores the intersection of theatre arts and cultural fieldwork, encompassing the fields of theatre and therapy, theatre in education and theatre for social change/community-based theatre. Practitioners of applied theatre arts supplement their work as classroom teachers, therapists, social workers, case managers, community organizers and social activists.

Auditions and Entrance to the Degree Programs

Admission to the various degree programs is granted through the university's regular admission procedures in conjunction with the School of Dramatic Arts supplementary application procedure. See the Admission section of this catalogue, page 48xx (undergraduate) and page 80xx (graduate).

Admission to the B.A. program is determined by academic record, experience in theatre, and information required on the USC application for admission and the School of Dramatic Arts supplementary application. Students applying for the B.A. program must contact the School of Dramatic Arts directly to obtain

the supplementary application. However, no audition is required.

In addition to submitting a USC application for admission, a dramatic arts supplementary application and an in-person audition are required for the BFA and MFA programs. Auditions are held during January and February. Applicants should contact the School of Dramatic Arts directly to obtain supplementary application materials and to arrange for their audition.

The acting audition requires two monologues: one contemporary and one classical (preferably verse).

Auditions and interviews for all programs are held in major cities around the country including Los Angeles, Chicago and New York.

Students wishing to transfer from a community college or another four-year college or university into the Bachelor of Fine Arts curriculum must present training equivalent to their level of transfer or be prepared to take remedial work in acting, voice, movement, dramatic literature and stagecraft.

Admission to the BFA and MFA Design/Technical Direction, Stage Management and Sound Design programs is based on a personal interview and/or review of a portfolio. In addition, the student must submit a USC

application for admission and a dramatic arts supplementary application.

Applicants for the design programs must present a portfolio of their work at the time of their interview with the design faculty.

Interviews are held beginning in January for the following fall semester.

Admission to full graduate standing will be granted after the satisfactory completion of one semester. A satisfactory test score on the Graduate Record Examinations and a satisfactory grade point average are also required.

Application materials and details about audition dates and locations may be obtained from the Office of Admissions and Recruitment, School of Dramatic Arts, University of Southern California, Los Angeles, CA 90089-0791, (213) 740-1286.

International Study

In conjunction with Sarah Lawrence College and the British American Drama Academy, USC students have the opportunity to study theatre in London. For additional information, see International Study Options, page 71xx.

Degree Requirements

Bachelor of Arts

The Bachelor of Arts with a major or minor in theatre is a comprehensive theatre degree offered in cooperation with the USC Dornsife College of Letters, Arts and Sciences. Candidates for the degree must complete the university general education requirements in addition to the courses in the major prescribed by the School of Dramatic Arts. A total of 128 units is required for completion of the degree.

General Education Requirements

The university's general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. This program requires six courses in different categories, plus writing, foreign language and diversity requirements, which together comprise the USC Core. See pages 63xx and 250xx for more information.

School Majors

Students who choose the school major are required to complete a minimum of 52 units in theatre as specified:

REQUIRED COURSES		UNITS
THTR 101	Introduction to Acting	4
THTR 125	Text Studies for Production	4
THTR 130	Introduction to Theatrical Production	4
THTR 210	Theory and Practice of World Theatre I	4
THTR 211	Theory and Practice of World Theatre II	4
THTR 212	Theory and Practice of World Theatre III	4
THTR 305a	Directing	4
		28

One course (3 units) from:

THTR 230	Communicating Theatrical Design Concepts	3
THTR 231a	Costume Construction	3
THTR 232	Stage Lighting	3
THTR 335	Scenic Construction	3

One course (4 units) from:

THTR 300	Introduction to Modern Drama	4
THTR 301	Greek and Roman Theatre	4
THTR 302	Shakespeare in His World	4
THTR 313	Comedy of Manners	4
THTR 314	Advanced Topics in Modern Drama	4
THTR 395	Drama as Human Relations	4
THTR 396	God, Drama and Entertainment	4
THTR 403	The Performing Arts	4
THTR 404	Acting Theory	4
THTR 405	Performing Identities	4
THTR 406	Theatre on the Edge	4
THTR 476	African American Theatre, Dance and Performance	4

Required upper division theatre electives: 17

Total required theatre units: 52

Bachelor of Fine Arts

The Bachelor of Fine Arts provides four years of intensive training at the undergraduate level in performance studies including acting, design, sound design, stage management and technical direction. A total of 128 units of course work is required for this degree, including a minimum range of 75–84 theatre units depending on the requirements of each program.

All BFA Theatre majors are required to earn a grade point average of 2.75 (A = 4.0) in their theatre courses each semester. BFA students who fail to earn a GPA of

2.75 in their theatre courses will be placed on probation the following semester. Students who remain on probation for a consecutive second semester will be disqualified from the BFA program.

A student disqualified from continued study in the BFA program for failing to meet the GPA standards outlined above will be given the option of transferring into the B.A. program.

General Education Requirements

The university's general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. This program requires six courses in different categories, plus writing and diversity requirements, which together comprise the USC Core. See pages 63xx and 250xx for more information.

REQUIRED COURSES FOR THE

ACTING EMPHASIS (84 UNITS)		UNITS
THTR 110	Dramatic Analysis	2
THTR 115	Movement I	2
THTR 120ab	Acting I	2-2
THTR 130	Introduction to Theatrical Production	2-2
THTR 140ab	Voice I	2-2
THTR 210	Theory and Practice of World Theatre I	4
THTR 211	Theory and Practice of World Theatre II	4
THTR 212	Theory and Practice of World Theatre III	4
THTR 215ab	Movement II	2-2
THTR 220ab	Intermediate Acting I	2-2
THTR 240ab	Voice II	2-2
THTR 315ab	Physical Theatre I	2-2
THTR 320ab	Intermediate Acting II	2-2

THTR 340ab	Intermediate Voice	2-2	Two courses (6 units) from:			THTR 305a	Directing	4	
THTR 397	Theatre Practicum	2-2-2	THTR 432b	Scene Design II	3	THTR 330	Scene Design I	4	
THTR 415ab	Physical Theatre II	2-2	THTR 433b	Costume Design II	3	THTR 333	Stage Management I	3	
THTR 420ab	Advanced Acting	2-2	THTR 434b	Lighting Design II	3	THTR 336	Introduction to Sound Design	3	
THTR 440ab	Advanced Voice	2-2				THTR 397	Theatre Practicum	8	
THTR 471	Senior Showcase	2	Required theatre units			84	THTR 430	Stage Management II	3
THTR 480a	Performance for Camera	2	General education units			36	THTR 431	Seminar in Theatrical Design	2
THTR 497	Advanced Theatre Practicum	2	Electives			8	THTR 491	Theatre Organization and Administration	4
			Total:			128	THTR 492	Producing Theatre	4
One course from:			REQUIRED COURSES FOR THE SOUND			THTR 493ab	Periods and Styles	2-2	
THTR 305a	Directing	4	DESIGN EMPHASIS (84 UNITS)			UNITS	THTR 497	Advanced Theatre Practicum	4
THTR 365	Playwriting I	4	MUIN 275ab	Recording Arts Workshop	4-4	One class (4 units) from:			
One course from:			MUIN 340	Introduction to Sound Reinforcement	4	THTR 405	Performing Identities	4	
THTR 300	Introduction to Modern Drama	4	MUIN 389	Digital Equipment and Recording	2	THTR 406	Theatre on the Edge	4	
THTR 301	Greek and Roman Theatre	4				Required theatre and music units			84
THTR 302	Shakespeare in His World	4	THTR 101	Introduction to Acting	4	General education units			36
THTR 313	Comedy of Manners	4	THTR 125	Text Studies for Production	4	Electives			8
THTR 314	Advanced Topics in Modern Drama	4	THTR 130	Introduction to Theatrical Production	4	Total:			128
THTR 395	Drama as Human Relations	4	THTR 132ab	Art of Theatrical Design	2-2	REQUIRED COURSES FOR THE TECHNICAL			
THTR 396	God, Drama and Entertainment	4	THTR 210	Theory and Practice of World Theatre I	4	DIRECTION EMPHASIS (84 UNITS)			UNITS
THTR 403	The Performing Arts	4	THTR 211	Theory and Practice of World Theatre II	4	THTR 101	Introduction to Acting	4	
THTR 404	Acting Theory	4	THTR 212	Theory and Practice of World Theatre III	4	THTR 125	Text Studies for Production	4	
THTR 405	Performing Identities	4	THTR 236	Stage Sound	2	THTR 130	Introduction to Theatrical Production	4	
THTR 406	Theatre on the Edge	4	THTR 241	Methods and Materials	2	THTR 132ab	The Art of Theatrical Design	2-2	
THTR 476	African American Theatre, Dance and Performance	4	THTR 305a	Directing	4	THTR 210	Theory and Practice of World Theatre I	4	
Required theatre units	84		THTR 332	Lighting Design I	4	THTR 211	Theory and Practice of World Theatre II	4	
General education units	36		THTR 333	Stage Management I	3	THTR 212	Theory and Practice of World Theatre III	4	
Electives	8		THTR 336	Introduction to Sound Design	3	THTR 231a	Costume Construction	3	
Total:	128		THTR 397	Theatre Practicum	5	THTR 232	Stage Lighting	3	
REQUIRED COURSES FOR THE DESIGN EMPHASIS (84 UNITS)			UNITS	THTR 431	Seminar in Theatre Design	2	THTR 236	Stage Sound	2
THTR 101	Introduction to Acting	4	THTR 435	Advanced Theatrical Drafting	3	THTR 241	Methods and Materials	2	
THTR 125	Text Studies for Production	4	THTR 436	Sound for Theatre	3	THTR 305a	Directing	4	
THTR 130	Introduction to Theatrical Production	4	THTR 441	Advanced Sound Design	3	THTR 330	Scene Design I	4	
THTR 132ab	Art of Theatrical Design	2-2	THTR 497	Advanced Theatre Practicum	4	THTR 332	Lighting Design I	4	
THTR 210	Theory and Practice of World Theatre I	4	One course (4 units) from:			THTR 333	Stage Management I	3	
THTR 211	Theory and Practice of World Theatre II	4	THTR 330	Scene Design I	4	THTR 335	Scenic Construction	3	
THTR 212	Theory and Practice of World Theatre III	4	THTR 331	Costume Design I	4	THTR 336	Introduction to Sound Design	3	
THTR 241	Methods and Materials	2	Required theatre and music units			84	THTR 397	Theatre Practicum	6
THTR 305a	Directing	4	General education units			36	THTR 435	Advanced Theatrical Drafting	3
THTR 330	Scene Design I	4	Electives			8	THTR 437	Scene Painting	3
THTR 331	Costume Design I	4	Total			128	THTR 438	Technical Theatre	3
THTR 332	Lighting Design I	4	REQUIRED COURSES FOR THE STAGE			THTR 490	Directed Research	2	
THTR 397	Theatre Practicum	1-1-2-2	MANAGEMENT EMPHASIS (84 UNITS)			UNITS	THTR 493ab	Periods and Styles	2-2
THTR 407ab	Drawing and Rendering for the Theatre	2-2	MUCO 101X	Fundamentals of Music Theory	2	THTR 497	Advanced Theatre Practicum	4	
THTR 431	Seminar in Theatre Design	2	THTR 101	Introduction to Acting	4	Required theatre units			84
THTR 435	Advanced Theatrical Drafting	3	THTR 125	Text Studies for Production	4	General education units			36
THTR 437	Scene Painting	3	THTR 130	Introduction to Theatrical Production	4	Elective units			8
THTR 493ab	Periods and Styles	2-2	THTR 132ab	Art of Theatrical Design	2-2	Total:			128
THTR 497	Advanced Theatre Practicum	4	THTR 210	Theory and Practice of World Theatre I	4	Bachelor of Arts in Visual and Performing Arts Studies			
Two courses (6 units) from:			THTR 211	Theory and Practice of World Theatre II	4	The Bachelor of Arts in Visual and Performing Arts Studies is an interdisciplinary degree offered jointly by the School of Dramatic Arts, the School of Architecture, the School of Cinematic Arts, the Roski School of Fine Arts, the Thornton School of Music, and the Dornsife College			
THTR 432a	Scene Design II	3	THTR 212	Theory and Practice of World Theatre III	4				
THTR 433a	Costume Design II	3	THTR 232	Stage Lighting	3				
THTR 434a	Lighting Design II	3	THTR 302	Shakespeare in his World	4				

of Letters, Arts and Sciences. Candidates for the degree must complete the university general education requirements in addition to the courses in the major. Students in this major complete a core of required courses that provides them with a broad understanding of the various disciplines. The work in the major is completed by choosing courses from a wide array of course offerings from all the participating schools. A total of 128 units is required for completion of the degree.

General Education Requirements

The university's general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. This program requires six courses in different categories, plus writing, foreign language and diversity requirements, which together comprise the USC Core. See page 63xx and page 250xx for more information.

REQUIRED CORE COURSES (SURVEY OF THE ARTS)		UNITS
AHIS 120	Foundations of Western Art	4
ARCH 304x	Intensive Survey:	
	Prehistory to the Present	4
CTCS 393	History of the American Film,	
	1946–1975	4
DANC 380	Historical Approaches to Dance	4
FACS 150	Visual Culture and Literacy I	4
MUHL 315x	Music and Culture	4
THTR 125	Text Studies for Production	4
Total:		28

CASE STUDIES IN THE ARTS:

12 units of upper division course work from the following:

Architecture:

ARCH 314	History of Architecture:	
	Contemporary Issues	3
ARCH 432	People, Places and Culture:	
	Architecture of the	
	Public Realm	4
ARCH 434	City Cine: Visuality, Media and	
	Urban Experience	3
ARCH 440	Literature and the Urban	
	Experience	4
ARCH 444	Great Houses of Los Angeles	4
ARCH 454	Contemporary Asian	
	Architecture	4

Cinematic Arts:

CTAN 451	History of Animation	2
CTCS 392	History of the American Film,	
	1925–1950	4
CTCS 394	History of the American Film,	
	1977–present	4
CTCS 406	History of American Television	4
CTCS 407	African-American Cinema	4
CTCS 409	Censorship in Cinema	4
CTCS 411	Film, Television, and Cultural	
	Studies	4
CTCS 412	Gender, Sexuality, and Media	4
CTCS 414	Latina/o Screen Cultures	4
ENGL 471	Literary Genres and Film	4
PHIL 446	Aesthetics and the Film	4

Fine Arts:

AHIS 319	Mesoamerican Art and Culture	4
AHIS 321	Greek Art and Archaeology	4
AHIS 322	Roman Art and Archaeology	4
AHIS 330	Medieval Art	4
AHIS 343	Renaissance Art	4
AHIS 364	Myths, Arts, Realities:	
	Visual Culture in California	
	1849 to the Present	4
AHIS 368	Modern Art I: 1700–1850	4
AHIS 369	Modern Art II: 1851–1940	4
AHIS 370	Modern Art III: 1940 to the	
	Present	4
AHIS 373	History of Photography	4
AHIS 384	Early Chinese Art	4
AHIS 385	Later Chinese Art	4
FACS 350	Art Theory and Criticism	4
FAIN 330	Ideas in Intermedia	4
PAS 371	Art in the Public Realm:	
	Contemporary Issues	4
PAS 400	New Models of Art in City-Space	4

Music:

MUHL 331	Music History III	3
MUHL 332	Studies in Musical Culture	3
MUHL 476	Music Criticism	2
MUJZ 419	The Jazz Experience:	
	Myths and Culture	4
MUSC 400	The Broadway Musical:	
	Reflection of American Diversity,	
	Issues, and Experiences	4
MUSC 420	Hip-Hop Music and Culture	4
MUSC 444	American Roots Music:	
	History and Culture	4
MUSC 460	Film Music: History and	
	Function from 1930 to	
	the Present	4
MUSC 465	Music, Television and	
	American Culture	4

Theatre:

COLT 354	Revolutions in Theater	4
THTR 301	Greek and Roman Theatre	4
THTR 302	Shakespeare in His World	4
THTR 313	Comedy of Manners	4
THTR 314	Advanced Topics in Modern	
	Drama	4
THTR 403	The Performing Arts	4
THTR 405	Performing Identities	4
THTR 406	Theatre on the Edge	4
THTR 476	African-American Theatre,	
	Dance and Performance	4
THTR 481	From the Border to Broadway	4

Other Courses:

COLT 381	Psychoanalysis and the Arts	4
PHIL 445	Philosophy of the Arts	4

Overseas Study Opportunities:

FREN 432	French Theatre	
	(Paris Semester)	4
SPAN 464	Introduction to Contemporary	
	Spanish Theatre	
	(Madrid Center)	4

Minor Programs

Minor in Applied Theatre Arts

Applied theatre arts is a field of study addressing the theory and practice of applying theatre arts in non-traditional settings with emphases that include education, therapy and social change. The minor in applied theatre arts (ATA) addresses the theory and practice of applying theatre skills in these environments to promote engaged and enlivened interactive critical thinking and community development from a performative perspective. ATA minors learn how to turn passive spectators into more active participants through the process of theatre.

Courses taken for this minor may not duplicate requirements for a student's major or other minor program requirements:

FOUNDATION SKILLS COURSES (8 UNITS)		UNITS
It is recommended these be taken first:		
THTR 101	Introduction to Acting	4
THTR 305a	Directing	4

ATA FOCUS COURSES (12 UNITS)

It is recommended these be taken after foundation skills courses:		
THTR 468	Theatre in Education	4
THTR 477	Theatre and Therapy	4
THTR 488	Theatre in the Community	4

Minor in Theatre

This general minor in theatre invites students to explore the many facets of this exciting field. Students have the opportunity to take a variety of classes in acting, playwriting, literature, stage management, directing, costume design and production. The curriculum is very flexible and encourages students to develop a primary interest for upper-division course work. All minor students are eligible to participate in performance and production projects.

REQUIRED COURSES		UNITS
THTR 101	Introduction to Acting, or	
THTR 125	Text Studies for Production	4
THTR 130	Introduction to Theatrical	
	Production	2

One of the following:

THTR 301	Greek and Roman Theatre	4
THTR 302	Shakespeare in His World	4
THTR 313	Comedy of Manners	4
THTR 314	Advanced Topics in Modern	
	Drama	4
THTR 476	African American Theatre	4

Required upper-division THTR electives:	14
Required theatre units:	24

Minor in Musical Theatre

The minor in musical theatre, interdisciplinary in nature, is a 27-unit program incorporating the study of acting, dance or movement, vocal arts and related musical subjects. Admission to the minor requires an audition for music but not for theatre. See the Thornton School of Music, page 817xx, for requirements.

Minor in Performing Arts Studies

The minor in performing arts provides an interdisciplinary inquiry into the nature and aesthetics of the performing arts. It combines the disciplines of cinematic arts, dance, music and theatre. The minor is a unique course of study that looks at how the performing arts contribute to a culturally literate society. The minor in performing arts studies is a 20-unit program.

REQUIRED COURSES

UNITS

Required capstone course:

THTR 403	The Performing Arts	4
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Plus a minimum of four courses (16 units) from the following list. Three courses (12 units) must be upper division. One course (4 units) must be selected from each school.

CTCS 190	Introduction to Cinema	4
CTCS 200	History of the International Cinema I	4
CTCS 201	History of the International Cinema II	4
CTCS 392	History of the American Film, 1925-1950	4
CTCS 393	History of the American Film, 1946-1975	4
CTCS 404	Television Criticism and Theory	4
CTCS 464	Film and/or Television Genres	4
CTCS 469	Film and/or Television Style Analysis	4
DANC 280	Dance as an Art Form	4
DANC 380	Historical Approaches to Dance	4
DANC 385	Choreography and Performance	4
MUHL 302	Musical Cultures of the World	4
MUJZ 100x	Jazz: America's Music	4
MUSC 400	The Broadway Musical: Reflection of American Diversity, Issues, and Experiences	4
THTR 201	Introduction to the Theatre	4
THTR 300	Introduction to Modern Drama	4
THTR 301	Greek and Roman Theatre	4
THTR 302	Shakespeare in His World	4
THTR 404	Acting Theory	4
THTR 493ab	Periods and Styles	2-2
Total units required:		20

Note for cinematic arts, music and theatre majors: cinema majors take 8 units of music and 8 units of theatre; music majors take 8 units of cinema and 8 units of theatre; theatre majors take 8 units of cinema and 8 units of music.

Minor in Playwriting

The minor in playwriting presents undergraduate students who are not theatre majors with a concentration in the discipline of playwriting as a means for broadening and deepening expression using the literary and performing arts. This minor offers a foundation for extended expression in dramatic writing and creative writing genres in general; fostering skills in research, development, communication, collaboration and craftsmanship in the process of preparing a play

for its realization on stage. The minor in playwriting is a 20-unit program.

REQUIRED COURSES

UNITS

THTR 101	Introduction to Acting, or	
THTR 125	Text Studies for Production	4
THTR 305a	Directing	4
THTR 365	Playwriting I	4
THTR 366	Playwriting II	4
THTR 479	Solo Performance	4

Master of Fine Arts

The Master of Fine Arts in theatre allows the choice of an area of emphasis in theatre performance studies including acting, directing, dramatic writing or theatrical design.

Seventy-two units of study at the 400- or 500-level are required for the acting emphasis, 72 units for the dramatic writing emphasis and 48 units for the directing and theatrical design emphases. Regardless of the emphasis, at least two-thirds of the units must be at the 500 level or higher. In design, instead of a conventional thesis, the MFA student completes a final project in the area of design and defends it orally before the design faculty. A grade point average of 3.0 must be achieved in all graduate work taken in the School of Dramatic Arts. Graduate candidates whose undergraduate degrees are in disciplines other than theatre may be required to satisfy undergraduate prerequisites in theatre as determined by School of Dramatic Arts faculty.

Curricula for the Master of Fine Arts Degree

ACTING EMPHASIS

UNITS

THTR 480ab	Performance for the Camera	2-2
THTR 504	The Art of Collaboration and Ensemble	2
THTR 515abcde	Advanced Movement	10
THTR 520abcde	Advanced Acting	16
THTR 529ab	Textual Studies for Performance	8
THTR 540abcdef	Advanced Voice Diction	12
THTR 541	Diction and Dialects	2
THTR 570	Acting on Camera: The Collaborative Process	2
THTR 571	Professional Seminar	2
THTR 575	Creative Production Projects	6
THTR 597	Theatre Practicum	8
		72

DIRECTING EMPHASIS

UNITS

THTR 520ab	Advanced Acting	8
THTR 525	Seminar in Contemporary Theatre	4
THTR 528	Seminar in Dramatic Analysis	4
THTR 555	Directing Fundamentals	2
THTR 556ab	Directing	4
THTR 558ab	Design for Directors	4
THTR 567a	Studies in Playwriting	4
THTR 591	Seminar in Producing Theatre	4
THTR 593	MFA Project	4
Electives by advisement		10
		48

THEATRICAL DESIGN EMPHASIS

UNITS

Two courses from:

THTR 550a	Seminar in Scene Design	3
THTR 552a	Seminar in Costume Design	3
THTR 553a	Seminar in Lighting Design	3

Two continuing courses from:

THTR 550b	Seminar in Scene Design	3
THTR 552b	Seminar in Costume Design	3
THTR 553b	Seminar in Lighting Design	3

One remaining course from:

THTR 550a	Seminar in Scene Design	3
THTR 552a	Seminar in Costume Design	3
THTR 553a	Seminar in Lighting Design	3

All of the following:

THTR 407ab	Drawing and Rendering for the Theatre	2-2
THTR 435	Advanced Theatrical Drafting	3
THTR 493ab	Periods and Styles	2-2
THTR 593	MFA Project	4

Two seminars, one of which must be

THTR 528	Seminar in Dramatic Analysis (4)	8
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400- or 500-level electives by advisement, 5 units of which must be at the 500 level

10
48

DRAMATIC WRITING EMPHASIS

UNITS

CTWR 513	Writing the Short Script	2
CTWR 514ab	Basic Dramatic Screenwriting	2-2
THTR 486	Creating Characters	4
THTR 501	Poetry and Prose into Drama	4
THTR 504	The Art of Collaboration and Ensemble	2
THTR 510	Writing the Short Drama	2
THTR 512	Studies in Dramatic Analysis	2
THTR 525	Seminar in Contemporary Theatre	4
THTR 529a	Textual Studies for Performance	4
THTR 554	Visual and Spatial Relationship	2
THTR 567ab	Studies in Playwriting	4-4
THTR 572	Global Dramatic Writing	4
THTR 574	Dramatic Writing Across Media for the Playwright	4
THTR 575	Creative Production Projects	4
THTR 593	MFA Project	4
THTR 595ab	Graduate Playwrights' Workshop	4-4
Electives		10
		72

A minimum of 72 units of graduate course work must be completed prior to the degree being granted. Thesis Requirement: The student is required to complete a thesis portfolio consisting of four theatre projects: (1) a full-length original play, (2) a full-length original play or an adaptation, (3) a full-length screenplay, (4) a project that is either a play of any length, or a short subject or feature length script, a set of television speculative scripts (either in three half-hour short form of drama from the same TV program or a set of characters; or

one-hour long form) or an interdisciplinary/multimedia project (approved in advance by the dramatic writing faculty.) An oral defense and review by program faculty and the developing portfolio is required when the student has completed two-thirds of the program, generally in the fall term of the student's third year.

Master of Arts, Applied Theatre Arts

The Master of Arts in Applied Theatre Arts explores the intersection of theatre and cultural fieldwork, encompassing the fields of theatre and therapy, theatre in education and theatre for social change/community-based theatre. This combined area of study weaves all three disciplines together under the aegis of training practitioners in the *art* of popular theatre with primarily marginalized communities. Practitioners of applied theatre arts supplement their work as classroom teachers, therapists, social workers, case managers, community organizers and social activists to engage public groups to obtain their goals and desires by using the tools of theatre to expedite dialogue and foster an atmosphere of greater critical consciousness and increased agency. A written and oral examination is required upon completion of course work.

International Study

All students will participate in an international externship during the summer following their academic year. This externship takes place in an approved overseas site where the practice of applied theatre arts is well established, with whom the university has a contractual agreement for supervised observation. This externship intends to provide a supervisory, logistical and theoretical container for students to explore cultural fieldwork in the international arena.

Curricula for the Master of Arts Degree

APPLIED THEATRE ARTS		UNITS
THTR 505	Staging Community-based Theatre	3
THTR 521	Engaging Community Narratives	3
THTR 544	Embodied Poetics	2
THTR 568	Popular Theatre for Education and Development	3
THTR 577	Theatre and Therapy for Cultural Fieldwork	3
THTR 578	Theatre of the Oppressed Theory, Games, and Techniques	4
THTR 579	Writing Culture	3
THTR 586ab	Applied Theatre Arts: Los Angeles Residency	2-2
THTR 587	Liberation Arts and Community Engagement — Theory	4
THTR 588	Liberation Arts and Community Engagement — Praxis	3
THTR 592ab	Participatory Action Research for Community-based Theatre	2-2
THTR 598	Applied Theatre Arts: International Externship	2
		<hr/> 38

Courses of Instruction

THEATRE (THTR)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

THTR 101 Introduction to Acting (4, FaSp) Study of genres, terminology, and disciplines of acting; fundamental techniques necessary for performance; scene study from contemporary plays.

THTR 110 Dramatic Analysis (2, Fa) Actors work on the text: analysis in rehearsal of scripts drawn from contemporary realism for dramatic characterization. *Corequisite:* THTR 115, THTR 120a, THTR 140a.

THTR 115 Movement I (2, Fa) Basic training for the actor's body for expression and communication. Awareness and control through mind-body techniques. *Corequisite:* THTR 110, THTR 120a, THTR 140a.

THTR 120ab Acting I (2-2, Sp) Basic principles and techniques of acting through theatre games and improvisation. Introduction to contemporary texts, basic characterization and cold reading techniques. Open to BFA majors only. *Corequisite:* a: THTR 110, THTR 115, THTR 140a; b: THTR 140b.

THTR 121abx Fundamentals of Acting (2-2, FaSp) a: The elements of the actor's imaginative skills. b: Continuation of THTR 121a. Not available for credit to theatre majors.

THTR 122 Improvisation and Theatre Games (2, max 4, FaSp) Individual and group exercise to free the actor physically and emotionally and to stimulate creativity, imagination, and self-expression.

THTR 124abx Character Acting (2-2, FaSp) a: Concentration of imaginative processes which develop the individual characteristics of a dramatic role. b: Continuation of THTR 124a. Not available for credit to theatre majors.

THTR 125 Text Studies for Production (4, Fa) Focuses on the questions, artistic choices, methodologies, and approaches of an actor/director/designer in the preparation of a production score prior to rehearsal.

THTR 130 Introduction to Theatrical Production (2, max 4, FaSp) Introduction to the non-performance areas of theatrical production (administrative, design, and technical fields) through hands-on participation in USC productions.

THTR 132ab Art of Theatrical Design (2-2, FaSp) a: A guided student exploration of the fundamentals of applied design elements and their use as creative tools in the design process; b: Development of the artistic process and theatrical design vocabulary of the individual within the environment of collaborative storytelling.

THTR 140ab Voice I (2-2, Fa) Physiological mechanism of voice: breath control, phonation, resonance, articulation of language for the stage; expressive use of stress, intonation and rhythm. *Corequisite:* a: THTR 110, THTR 115, THTR 120a; b: THTR 120b.

THTR 152 Introduction to Scene Study (2, FaSp) Application and consolidation of the skills, knowledge and techniques acquired in the study of fundamentals of acting encountered in THTR 101. *Prerequisite:* THTR 101.

THTR 195 Theatre on Film (4, FaSp) Introduction to the theatre and its relationship to society through major plays in film versions. Separate screenings to be arranged.

THTR 201 Introduction to the Theatre (4, Sp) Gateway to the majors and minors in theatre. Introduction to and exploration of the creative elements of theatre art: playwriting, acting, directing, and design of scenery, lighting, and costume. Research on a selected area. (Duplicates credit in former THTR 100.)

THTR 210 Theory and Practice of World Theatre I (4, Fa) A multicultural and transnational examination of the history, theory and practice of theatre from its origins to the age of Shakespeare and Zeami. *Recommended preparation:* THTR 125.

THTR 211 Theory and Practice of World Theatre II (4, Sp) A multicultural and transnational examination of the history, theory and practice of theatre from the Renaissance to the 19th Century. (Duplicates credit in former THTR 311.) *Recommended preparation:* THTR 125.

THTR 212 Theory and Practice of World Theatre III (4, Sp) A multicultural and transnational examination of the history, theory and practice of theatre from the late 19th century to the present date. *Recommended preparation:* THTR 125.

THTR 215ab Movement II (a: 2, Fa; b: 2, Sp) a: Training of the actor's body with focus on development of precision and strength. *Prerequisite:* THTR 115; *corequisite:* THTR 220a, THTR 240a. b: Training of the actor's body with focus on mask work for the development of precision, strength and expressiveness. *Prerequisite:* THTR 215a; *corequisite:* THTR 220b, THTR 240b.

THTR 216 Movement for Actors (2, FaSp) Training and practice in the coordination of the physical apparatus of the actor utilizing various movement techniques through improvisation.

THTR 220ab Intermediate Acting I (2-2, FaSp) Continuing development of imagination leading to an increased range of dramatic expression through the formalized text of William Shakespeare. *Prerequisite:* THTR 120b.

THTR 222 Stage Make-up (2, FaSp) Principles of stage make-up materials and skills allowing the actors to enhance their features and techniques for moderate and extreme aging, injuries, and character roles.

THTR 230 Communicating Theatrical Design Concepts (3, FaSp) The visualization and communication of design ideas through free-hand and mechanical drawing, including orthographics, isometrics, perspective, shades and shadows, plans, sections and elevations.

THTR 231ab Costume Construction (3-3, FaSp) Historical survey, theory and practice in construction of costume, emphasis on period and style. *Recommended preparation:* THTR 125, THTR 201.

THTR 232 Stage Lighting (3, FaSp) Theory and practice of theatrical lighting design including electricity, radiant energy, refraction, reflection, absorption, chromatic variation, and electronic controls. *Prerequisite:* THTR 131.

THTR 236 Stage Sound (2, FaSp) Basic audio engineering science, how sound is measured, basic transducers and signal flow. Operation of recording and playback equipment used in theatrical sound design/mixing.

THTR 240ab Voice II (2-2, FaSp) Development of the voice using material which explores the techniques of Shakespeare and his contemporaries. *Prerequisite:* THTR 140b; *corequisite:* a: THTR 215a, THTR 220a; b: THTR 215b, THTR 220b.

THTR 241 Methods and Materials (2, FaSp) Cutting-edge and traditional methods and materials that enhance both the planning stages and realization of the theatrical design.

THTR 252ab Intermediate Acting I (2-2, FaSp) a: Polishing the actor's skills through analysis and class performance of scenes from plays. b: Continuation of THTR 252a.

THTR 295 Theatre in America (2, max 8, FaSp) Current state of American theatre, through a study of acting, playwriting, criticism, stage design, lighting, and dramatic styles.

THTR 300 Introduction to Modern Drama (4, Fa) An investigation of the ideas, forms, genres, and thematic concerns of modern drama. Equal emphasis is placed on the plays and their historical contexts. (Duplicates credit in former THTR 200.)

THTR 301 Greek and Roman Theatre (4, Fa) Examines the function of theatre, production and acting conventions, and the drama of classical Greece and Rome. (Duplicates credit in former THTR 213.) *Recommended preparation:* THTR 125, THTR 201.

THTR 302 Shakespeare in His World (4, Sp) The plays and theatre of Shakespeare, the influences on his work and his contemporary world. (Duplicates credit in former THTR 214.) *Recommended preparation:* THTR 201, THTR 210, THTR 211.

THTR 305ab Directing (4-4, FaSp) Examination of basic directorial principles. Pre-production analysis and rehearsal procedures; relationship of the director to actor; integration of technical aspects of production. *Prerequisite:* THTR 305a before b.

THTR 313 Comedy of Manners (4, Fa) Study of the development of Comedy of Manners, with primary focus on Restoration Comedy of Manners. *Recommended preparation:* THTR 201, THTR 210, THTR 211.

THTR 314 Advanced Topics in Modern Drama (4, Sp) 20th century realism and the avant-garde. *Recommended preparation:* THTR 201, THTR 210, THTR 211.

THTR 315ab Physical Theatre I (2-2, FaSp) Actor training anchored by rigorous physical movements. Activities include comedy, clowning, juggling, and mask work. Open to BFA Acting majors only.

THTR 316 Advanced Movement for Actors (2, FaSp) Advanced physical training for the B.A. actor utilizing various movement techniques through improvisation. For B.A., Theatre (Acting) students only. *Prerequisite:* THTR 216.

THTR 320ab Intermediate Acting II (2-2, FaSp) Further development of range and breadth of performance skills with emphasis on texts of heightened language and style. Open to BFA Acting majors only. *Prerequisite:* THTR 220b; *corequisite:* a: THTR 315a, THTR 340a; b: THTR 315b, THTR 340b.

THTR 330 Scene Design I (4, Fa) Historical styles, methods, and dramatic analysis for scene design as applied in contemporary practice. *Recommended preparation:* THTR 130ab.

THTR 331 Costume Design I (4, Sp) Historical styles, methods, and dramatic analysis in costume design as applied in contemporary practice. Execution of costume designs for assigned works. *Recommended preparation:* THTR 231.

THTR 332 Lighting Design I (4, FaSp) Historical styles, methods, and dramatic analysis in lighting design as applied in contemporary practice.

THTR 333 Stage Management I (3, Fa) Basic skills, including assembly of prompt book, blocking notation, and organizational and communication procedures applied in theatre production.

THTR 335 Scenic Construction (3, FaSp) Technology, organization, and operation of the theatrical scene shop centered around the proper and safe use of tools, the choosing of materials, and methods of construction. (Duplicates credit in former THTR 131.)

THTR 336 Introduction to Sound Design (3, FaSp) The art and techniques of theatrical sound design. The use of music and ambient sound in theatrical presentations. Design elements as metaphor.

THTR 340ab Intermediate Voice (2-2, FaSp) Extended development of vocal freedom and range, acquisition of articulate speech. Enhancement of vocal power and resonance, techniques for performing with a dialect. Open to BFA Acting majors only. *Concurrent enrollment:* THTR 315ab, THTR 320ab.

THTR 341x Voice for the Non-Theatre Major (2, Fa) Designed for the non-theatre major focusing on the range, color, texture, and projection of the human voice in a variety of situations. Not available for credit to theatre majors.

THTR 342ab Basic Voice (2-2, FaSp) a: Examination of the individual voice centering on resonance, tone, flexibility, and support through dramatic selections for transmitting meaning and emotion of character. b: Continuation of THTR 342a.

THTR 343 Musical Theatre Audition (3, FaSpSm) Designed to give students confidence and integrity for auditions in musical theatre. Choosing appropriate material and preparation for the audition and performance. Audition required.

THTR 352ab Intermediate Acting II (2-2, FaSp) a: Building and sustaining character in drama. b: Continuation of world drama. Class performance and critique. *Prerequisite:* THTR 252b.

THTR 354 Acting Shakespeare (2, FaSp) Basic approach to the acting and analysis of the highly formalized texts of William Shakespeare. *Prerequisite:* THTR 101; *recommended preparation:* THTR 252b.

THTR 365 Playwriting I (4, FaSp) Essential elements of playwriting through weekly assignments, students' initiative, occasional productions of scenes, and extensive classroom analysis.

THTR 366 Playwriting II (4, FaSp) Continuation of the work begun in THTR 365. *Prerequisite:* THTR 365.

THTR 390 Special Problems (1-4, FaSp) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

THTR 395m Drama as Human Relations (4) A focus on American ethnic and multicultural diversity from the perspectives of gender, race, and myth as revealed in plays, film, and other performance media.

THTR 396 God, Drama and Entertainment (4, FaSp) An exploration of money, power, sex and love in relation to secular and spiritual values represented by contemporary theatre media.

THTR 397 Theatre Practicum (1-4, max 12, FaSpSm) Substantive participation in productions sponsored by the school and supervised by the faculty.

THTR 403 The Performing Arts (4, FaSp) An interdisciplinary inquiry into the aesthetics of the performing arts. Examines a dramatic classic and its adaptation into musical theatre, opera, ballet, and film. (Duplicates credit in the former THTR 303.)

THTR 404 Acting Theory (4, FaSp) Examination of the theoretical foundations of acting as an art form through the reading of primary historical texts.

THTR 405m Performing Identities (4, FaSp) This course explores the live performance medium as a creative means of social redress and personal expression. (Duplicates credit in the former THTR 393m.)

THTR 406 Theatre on the Edge (4, FaSp) An exploration of the art of theatre at the edge of possibilities.

THTR 407ab Drawing and Rendering for the Theatre (2-2, FaSp) Drawing and rendering techniques appropriate for theatre designers. *a*: Drawing and drawing theory. *b*: Drawing and rendering. (Duplicates credit in former FA 407ab.)

THTR 408ab Dialects (2-2, FaSpSm) *a*: The study of standard American stage dialect using the international phonetic alphabet. *b*: The study of accents and regional dialects. *Prerequisite* for *b*: THTR 408a.

THTR 415ab Physical Theatre II (2-2, FaSp) Advanced Physical Acting focusing on principles of verbal/non-verbal improvisation and communication. Elements of textual analysis, including development of character mask and of the ensemble. Open to BFA Acting majors only. *Prerequisite*: THTR 315b.

THTR 417 Stage Combat (2, FaSp) Introduction to safe and effective portrayals of violence for the stage. Training and practice of unarmed stage combat skills. *Recommended preparation*: THTR 216.

THTR 419 Alexander Technique for Performers (2, FaSp) Training and practice in the work of F.M. Alexander. A clear and systematic look into the underlying principles that govern human movement.

THTR 420ab Advanced Acting (2-2, FaSp) Contemporary material from plays and screenplays with an emphasis on individual challenges and problems. Open to BFA acting majors only. *Prerequisite*: THTR 320b; *corequisite*: *a*: THTR 415a, THTR 440a; *b*: THTR 415b, THTR 440b.

THTR 421 Public Speaking as Performance: A Course for Non-Actors (2, FaSpSm) Public speaking approached as performance, using acting techniques to communicate with confidence, clarity and charisma.

THTR 430 Stage Management II (3, Sp) Application of stage management procedures required in the professional theatre. *Prerequisite*: THTR 333.

THTR 431 Seminar in Theatre Design (2, FaSp) Research into the application of contemporary topics relevant to theatrical design within the diverse cultural environment of the greater Los Angeles area.

THTR 432ab Scene Design II (3-3, FaSp) Continuation of THTR 330. Evolution of scene design through analysis of script, environmental factors, and styles. *Prerequisite*: THTR 330.

THTR 433ab Costume Design II (3-3, FaSp) Evolution of costume design through analysis of script, environmental factors, and styles. *Prerequisite*: THTR 331.

THTR 434ab Lighting Design II (3-3, FaSp) Continuation of THTR 332. Evolution of lighting design through analysis of script, environmental factors, and styles. *Prerequisite*: THTR 332.

THTR 435 Advanced Theatrical Drafting (3) Drafting style and complex graphic communication. Emphasis on creating professional plates, developing an individual style and graphic problem solving.

THTR 436 Sound for Theatre (3, Fa) Introduction to electronic sound and sound reinforcement, including basic equipment, recording, editing, and show operation.

THTR 437 Scene Painting (3, Sp) Techniques, materials, and equipment of the scenic artist, including both historic and modern methods. *Recommended preparation*: paint and drawing experience.

THTR 438 Technical Theatre (3, Sp) Theory and practice of technical theatre. Emphasis is on technical problem solving and graphic solutions to technical theatre. *Prerequisite*: THTR 230.

THTR 439 Stage Properties (3, Sp) Organization, management, and construction of properties for the theatre.

THTR 440ab Advanced Voice (2-2, FaSp) Continuation of exercises related to the individual student for the stage. Open to BFA students only. *Prerequisite*: THTR 340ab.

THTR 441 Advanced Sound Design (3, Sp) Advanced exploration of theatrical sound design theory and related technology; creative uses of music, sound effects, and audio equipment in modern theatres. *Prerequisite*: THTR 436.

THTR 442 Voice-over Acting (2, FaSp) Acting techniques, recording studio technology and editing for the field of voice acting and voice-overs. *Prerequisite*: THTR 342a or THTR 408a.

THTR 444 Applied Voice: Speech and Text (3, Fa) Intensive study of speech and voice regarding text, context, environment, dynamics, range, and accent. *Recommended preparation*: THTR 342ab.

THTR 452ab Advanced Acting (4-4, FaSp) Intensive investigation and performance of audition techniques. Scene study skills developed, including cold readings, first readings, rehearsal procedure, performance process, camera/taping. *Prerequisite*: THTR 352b.

THTR 454 Acting Shakespeare II (2, FaSp) A continuation and deeper investigation of the analysis and performance of the highly formalized texts of William Shakespeare. *Prerequisite*: THTR 354.

THTR 458 Visiting Artist Workshop (2, max 4, FaSp) A workshop course taught by the visiting artist holding the George Burns chair. Course topics will be determined by the instructor.

THTR 459 Songwriting for the Musical Theatre (2, FaSp) Structure, character and intention in songwriting for the musical theatre. Writing for the voice and examination of how form follows content. Portfolio submission required.

THTR 465 Playwriting III (4) Analysis of a full-length play or its equivalent with continued production opportunity. *Prerequisite*: THTR 366.

THTR 466 Playwriting IV (4) Continuation of the work begun in THTR 465. *Prerequisite*: THTR 465.

THTR 468 Theatre in Education (4, Sp) Exploration of the theory and practice of theatre arts in the learning environment. Design and implement projects to support elementary and secondary education. *Recommended preparation*: THTR 201, EDUC 200.

THTR 470 Sketch Comedy for Theatre (2) A writing-performance workshop in which the students create, rehearse, and perform original sketch comedy material.

THTR 471 Senior Showcase (2) Designed to provide the graduating students with an opportunity to select, prepare and perform for agents, directors and producers in film, television and theatre. Audition required. Open to Theatre majors only.

THTR 472 Professional Preparation for Actors (2, FaSp) Introduction to the skills, knowledge, and promotional materials that will enable the student to manage an independent career in the performing arts. Open only to theatre majors at the senior level. *Recommended preparation*: THTR 101, THTR 252ab.

THTR 475 Acting on Camera: The Collaborative Process (4, max 8) Acting students will learn to develop on-camera acting skills and to collaborate with student directors and cinematographers from the School of Cinematic Arts. *Recommended preparation*: 300-level acting course.

THTR 476m African American Theatre, Dance, and Performance (4) A survey of African American theatre and cultural performance traditions as a reflection of both African American culture and American history.

THTR 477 Theatre and Therapy (4, Fa) Explores theatre as a healing art form. Techniques include games, improv, playback theatre, Boal's and Moreno's drama therapy, and Jungian dream theatre to name a few. Work with incarcerated youth, gay/lesbian/bi teens, elderly, disabled and other populations.

THTR 478ab Theatre for Youth (2-2) *a*: Theory and practice of youth theatre, including development and rehearsal of mainstage productions. Emphasis on multicultural and bilingual pieces. Enroll by audition or interview only. *b*: Continuation of *a*, bringing developed pieces into production for regional K-12.

THTR 479 Solo Performance (4, Fa) A writing-performance workshop in which students write, develop, and rehearse original, autobiographical and character monologues and perform them at the end of the semester.

THTR 480ab Performance for Camera (2-2, FaSpSm)
a: Structured to address the dynamics of acting in relation to film/television. Refining the students' understanding of the similarities/differences between acting on stage/film. (Duplicates credit in former THTR 480.)
b: Continued exploration of acting for film/television. Furthering the student's understanding of the similarities/differences between acting on stage/film.

THTR 481 From The Border to Broadway (4, Fa) An investigation of the role that Latina/o plays and performances have played in creating and documenting a contemporary American experience of the theatre.

THTR 484 Acting in Television Commercials (2, FaSm) An on-camera, workshop-style introduction to techniques, perspectives and theories unique to performing in television commercials. *Recommended preparation:* a 300-level acting or voice class.

THTR 485 Advanced Solo Performance (4, Sp) An advanced writing and performance workshop. Students will write and rehearse an extended personal monologue to be presented at the end of the semester. *Prerequisite:* THTR 479.

THTR 486 Creating Characters (4) A writing workshop devoted to the creation of living, breathing characters, exploring a range of techniques designed to develop authenticity.

THTR 487 Promotion for the Performing Arts (4, Fa) Introduction and overview of all aspects of marketing the arts including both non-profit and commercial organizations.

THTR 488m Theatre in the Community (4, Fa) Research and actively develop the theory of theatre as a moving political, social, economic and spiritual force of change within the local community.

THTR 489 Theatre Internship (2-6, max 12, FaSpSm) Practical experience in the entertainment industry.

THTR 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

THTR 491 Theatre Organization and Administration (4, Fa) Budgets, contracts, box-office procedures, public relations; personnel and executive policies of the school, community, and professional theatre.

THTR 492 Producing Theatre (4, Sp) Analysis of all procedures involved in producing theatre (commercial or non-profit) including legal and business guidelines and contracts. *Prerequisite:* THTR 491.

THTR 493ab Periods and Styles (2-2, FaSp) A survey of the influence of historical and cultural events on the evaluation of theatrical styles. *a:* Classical to Jacobean. *b:* Restoration to 20th century.

THTR 494 Raising Money for the Arts (4, Sp) Overview of fundraising techniques for non-profit theatre including grantsmanship, board development, direct mail soliciting, and money raising activities and events.

THTR 495 Experimental Theatre Workshop I (4, max 8, FaSp) Guidance and direction in the production of new and experimental plays for a public audience.

THTR 496 Experimental Theatre Workshop II (4, max 8, FaSp) Continuation of THTR 495*ab*. Enrollment by audition only.

THTR 497 Advanced Theatre Practicum (2, max 4, FaSp) Intensive participation in a production sponsored by the school and supervised by the faculty, to increase and develop artistic growth. *Prerequisite:* THTR 397.

THTR 498 Production Analysis and Performance (4) Investigation and analysis of the work of a major dramatist and his milieu; production of one of his plays.

THTR 499 Special Topics (2-4, max 8, FaSp) Studies in selected areas of theatre art. Intensive practice in role and script interpretation and its psychological relationship to the audience.

THTR 501 Poetry and Prose into Drama (4, Sp) Plays for the stage shall be written using public-domain poetry and prose as inspiration and source material, complemented with exploring poetry, prose, and varied dramas as context for the student writer. Students should be well-versed in literature, and have written in one or more genres. *Recommended preparation:* reading poetry and novels.

THTR 504 The Art of Collaboration and Ensemble (2, FaSp) An investigation of the role that collaboration plays in making ensemble work. MFA Actors will collaborate with MFA Dramatic Writers in creating an ensemble company.

THTR 505 Staging Community-based Theatre (3, Sp) Explores the theory and practice of staging community-based popular theatre, including Theatre of the Oppressed, street theatre, witness theatre, agit-prop and festival theatre events.

THTR 510 Writing the Short Drama (2, FaSp) The art and craft of dramatic writing. In particular exploring its dimensions with regard to character and story development in the ten minute play.

THTR 512 Studies in Dramatic Analysis (2, FaSp) A skill-based workshop that uses a historical survey of theatre texts to develop critical reading skills along two different tracks: Acting and Dramatic Writing.

THTR 513 Seminar in History of the Theatre (4) Bibliography, historical evolution, patterns, and techniques of the theatre from primitive to modern times.

THTR 515abcdef Advanced Movement (2-2-2-2-2-2, FaSp) Advanced exercises in movement for the use of the body in relation to the stage. *Corequisite for e:* THTR 480, THTR 540e, THTR 555, THTR 575; *corequisite for f:* THTR 520e, THTR 540f, THTR 597.

THTR 520abcde Advanced Acting (4-4-2-4-2, FaSp) Advanced training in acting skills; emphasis upon individual needs. *Corequisite for e:* THTR 515f, THTR 540f, THTR 571, THTR 597.

THTR 521 Engaging Community Narratives (3, Fa) Provides training for actor/artists who partner with non-actors in community-based theatre projects.

THTR 525 Seminar in Contemporary Theatre (4, SpSm) Analysis of trends, problems, and the work of major figures in the contemporary theatre.

THTR 526 Seminar in Dramatic Literature (4) Study and analysis of world drama best representing changes in philosophies, aesthetics, and tastes of audiences.

THTR 528 Seminar in Dramatic Analysis (4, Fa) Drama as a living art; reading, analysis, and discussion of plays which best illustrate principles of effective playwriting.

THTR 529ab Textual Studies for Performance (a: 4, Fa; b: 4, Sp) Close textual reading of dramatic texts as a fundamental tool for rehearsal and performance.

THTR 530 Seminar in Dramatic Criticism (4) Dramatic criticism from the classical Greek period to the modern.

THTR 533 Seminar in the American Theatre (4, 2 years, SpSm) History and literature of the American theatre from its beginning to the present day.

THTR 535 Seminar in Aesthetics of the Theatre (4) Aesthetic theories which apply to the art of the theatre; emphasis upon acting and play direction.

THTR 540abcdef Advanced Voice Diction (2-2-2-2-2-2, FaSp) Advanced individual vocal development and application to a variety of professional and performance circumstances. *Corequisite for e:* THTR 515e, THTR 575, THTR 480, THTR 555; *corequisite for f:* THTR 515f, THTR 520e, THTR 571, THTR 597.

THTR 541 Diction and Dialects (2, Fa) Fundamentals of speech, diction, dialects and accents, including work in the International Phonetic Alphabet.

THTR 544 Embodied Poetics (2, Fa) Explores the relationship between vocal and physical expression and the spontaneity of human impulse within the community-based context.

THTR 545 Visiting Artists Master Seminar (4, Sp) A workshop taught by a master visiting artist, concentrating on his/her specific expertise in relation to dramatic writing. Course topics determined by the instructor. *Recommended preparation:* reading or viewing the work of the visiting master artist.

THTR 550ab Seminar in Scene Design (3-3, FaSp)

Theory and practice of scene design; an intensive investigation into the relationship of a script to the visual statement.

THTR 552ab Seminar in Costume Design (3-3, FaSp)

Theory and practice of costume design; intensive investigation into the relationship of a script to the visual statement.

THTR 553ab Seminar in Lighting Design (3-3, FaSp)

Theory and practice of lighting design; intensive investigation into the relationship of a script to the visual statement.

THTR 554 Visual and Spatial Relationship (2, FaSp)

The illustration and understanding of how space can be used to add emotional undertone, contextual information and strong staging ideas to a production.

THTR 555 Directing Fundamentals (2) To provide the basic foundations for the conceptualization and execution of works for the stage.

THTR 556ab Directing (2-2) A seminar/workshop in developing and testing directorial skills: text, design, acting, producing, and communication with an audience. *Prerequisite:* a: THTR 555; b: THTR 556a.

THTR 558ab Design for Directors (2-2) Basic elements of scenic, costume, props, lighting, sound, and make-up design, as they apply to the art of directing. *Prerequisite:* a: THTR 555; b: THTR 558a.

THTR 567ab Studies in Playwriting (4-4) a: Extensive examination of playwriting, dramaturgical development process, and readings of work toward the completion of professionally promising plays. b: Continued extensive examination of playwriting, dramaturgy, development, and readings of work toward the completion of professionally promising plays.

THTR 568 Popular Theatre for Education and Development (3, Sp) Theory and practice of Theatre in Education and Theatre for Development as resources for conscientization and liberation of communities at the margins of power.

THTR 570 Acting on Camera: The Collaborative Process (2) Study of acting methods and techniques for the camera, focusing on collaboration with directors in the realization of screenplays.

THTR 571 Professional Seminar (2, Sp) Introduction to the world of the professional actor.

THTR 572 Global Dramatic Writing (4, FaSp) "Tour" of non-European and non-European American cultures with regard to their dramatic subject matter and traditions.

THTR 574 Dramatic Writing Across Media for the Playwright (4, FaSp) Intensive overview of career paths for playwrights in a wide array of media as they exist now, and as new opportunities arise.

THTR 575 Creative Production Projects (6) Advanced creative projects for production with emphasis on theatre as a synthesis of the performing arts.

THTR 577 Theatre and Therapy for Cultural Fieldwork (3, Sp) Explores the theory and practice of theatre and therapy in the cultural fieldwork and community development settings. *Recommended preparation:* THTR 587.

THTR 578 Theatre of the Oppressed: Theory, Games, and Techniques (4, FaSpSm) Basic theoretical foundations of game playing for populations at the margins of power. *Recommended preparation:* THTR 521, THTR 544.

THTR 579 Writing Culture (3, FaSpSm) Borrows from anthropology, popular/community-based theatre, cultural studies, and literature to provide an array of methodologies and approaches to artistic collaboration across cultures and difference.

THTR 586ab Applied Theatre Arts: Los Angeles Residency (2-2, FaSp) a: Academic and group process context for students' work in their chosen local internships to help students engage with communities as cultural fieldworkers. b: Supervisory, logistical, and theoretical container for THTR 586a. Engages students in their curricular experiences in the cultural field in partnership with their community-based organizations.

THTR 587 Liberation Arts and Community Engagement — Theory (4, Fa) Historical foundations of liberatory movements using expressive arts towards community-based goals of reciprocal and collaborative empowerment, civil rights, psychological or political freedom and justice.

THTR 588 Liberation Arts and Community Engagement — Praxis (3, Sp) Theory and practice of developing liberatory and Theatre of the Oppressed events, from first community contact to staged public event. *Prerequisite:* THTR 587.

THTR 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

THTR 591 Seminar in Producing Theatre (4) A seminar in the theories and processes of producing theatre (commercial and non-profit).

THTR 592ab Participatory Action Research for Community-based Theatre (a: 2, FaSp; b: 2, Sm) a: Examination of theories and practices of Participatory Action Research (PAR) to better understand its various forms in community-based contexts using theatre as the research mode. b: Implements the theories and practices of THTR 592a towards the creation of a summative research paper on the local and international applied theatre arts experience.

THTR 593 MFA Project (2, max 4, FaSpSm) Credit awarded upon completion of project. Graded CR/NC.

THTR 594abz Master's Thesis (2-2-o, FaSpSm) Credit on acceptance of thesis. Graded CR/NC.

THTR 595ab Graduate Playwrights' Workshop (4-4) a: Development of thesis plays utilizing faculty dramaturgical support and involvement of student actors/directors. Includes readings with/without audiences. Simulates professional development process. b: Continued development of thesis plays in a simulated professional development workshop process utilizing dramaturgy and involvement of student actors/directors. Culminates in staged readings.

THTR 597 Theatre Practicum (1-4, max 12, FaSpSm) Preparation, rehearsal, and performance of dramatic works in main stage repertory.

THTR 598 Applied Theatre Arts: International Externship (2) Supervisory, logistical and theoretical container for students exploring cultural fieldwork in international settings. *Prerequisite:* THTR 588.

THTR 599 Special Topics (2-4, max 8) Studies in selected areas of theatre art.



Doctor of Education candidate Alejandra Mendoza assists a student at USC Hybrid High, a Los Angeles charter high school founded by Rossier professor David Dwyer in 2012. The school's name stems from its mix of face-to-face instruction and personalized online curricula, an innovative teaching method that gives students more control over their education.

The USC Rossier School of Education is one of the world's premier centers for the study of urban education. The school is committed to preparing teachers, researchers, counselors, administrators and curricular specialists for leadership positions. The mission of the School of Education is to strengthen urban education locally, nationally and globally. Educators in urban areas face a unique set of challenges, including poverty, density, mobility and immigration; strained social conditions around housing, health care and crime; and cultural and linguistic diversity. Urban education takes place in many contexts including pre-kindergarten through high school, human services, higher education and workplace settings.

We seek to transform urban education by:

- Preparing and developing educational leaders who are change agents with a commitment to improving urban education and competencies to address the complex educational and social issues facing urban communities.
- Leading the search for innovative, efficacious and just solutions to the challenges in urban education by engaging in research on educational practices and policy.
- Creating mutually beneficial partnerships to rethink curriculum, improve educational environments and develop sound policy.

Our vision is to be a premier and distinctive School of Education, defined by innovative educational programs and scholarship that directly impact policy and practice in urban education.

The School of Education is committed to our four academic themes of leadership, diversity, learning and accountability that guide all academic, research and service efforts within our school.

USC Rossier School of Education
Waite Phillips Hall 1100
(213) 740-8313
usc.edu/dept/education

Administration

Karen Symms Gallagher, Ph.D., *Dean*
 Dominic J. Brewer, Ph.D., *Vice Dean, Research, Partnerships and Globalization*
 Lawrence O. Picus, Ph.D., *Vice Dean, Faculty Affairs*
 Melora Sundt, Ph.D., *Vice Dean, Academic Programs*
 Blair Sillers, *Chief of Staff*

Faculty

Emery Stoops and Joyce King-Stoops Dean's Chair in Education: Karen Symms Gallagher, Ph.D.

Richard T. Cooper and Mary Catherine Cooper Chair in Public School Administration: Guilbert C. Hentschke, Ph.D.

T. & I. Katzman/Ernst Chair in Educational Entrepreneurship: David Dwyer, Ph.D.

Irving R. and Virginia Archer Melbo Chair in Education: Rudy Castruita, Ed.D.

Clifford H. and Betty C. Allen Professor of Urban Leadership: Dominic J. Brewer, Ph.D.

Stephen Crocker Professor of Education: Robert Rueda, Ph.D.

Leslie Wilbur and Norma Lash Wilbur-Evelyn Keiffer Professor of Higher Education: William G. Tierney, Ph.D.

University Professors: Lloyd Armstrong, Jr., Ph.D.; William G. Tierney, Ph.D.

Professors: Ron Avi Astor, Ph.D. (*Social Work*); Estela Mara Bensimon, Ed.D.; Dominic J. Brewer, Ph.D.; Michael Diamond, Ph.D.; Guilbert C. Hentschke, Ph.D.; Harold F. O'Neil Jr., Ph.D.; Lawrence O. Picus, Ph.D.; Robert Rueda, Ph.D.; Gale Sinatra, Ph.D.; John B. Slaughter, Ph.D. (*Engineering*)

Associate Professors: Patricia Burch, Ph.D.; Darnell Cole, Ph.D.; Alicia Dowd, Ph.D.; Robert G. Keim, Ed.D. (*Dentistry*); Adrianna Kezar, Ph.D.; Tatiana Melguizo, Ph.D.; Brendesha Tynes, Ph.D.

Assistant Professors: Lauren Anderson, Ph.D.; Mary Helen Immordino-Yang, Ph.D.; Morgan Polikoff, Ph.D.; Jamy Stillman, Ph.D.; Katharine O. Strunk, Ph.D.

Professor of the Practice: Marleen Pugach, Ph.D.

Professors of Clinical Education: Reynaldo R. Baca, Ph.D.; Rudy M. Castruita, Ed.D.; Rudy F. Crew, Ed.D.; Raymond John Gallagher, Ph.D.; Pedro Garcia, Ed.D.; Dennis Hocevar, Ph.D., Michael Jackson, Ed.D. (*Student Affairs*); Sandra N. Kaplan, Ed.D.; Anthony B. Maddox, Ph.D.; Susan Metros, MFA (*Technology Enhanced Learning*); Margo Pensavalle, Ed.D.; Mark Power Robison, Ph.D.; Darlene Robles, Ph.D.; Sylvia Rousseau, Ed.D.; Julietta Shakhbagova, Ph.D.; Melora Sundt, Ph.D.

Associate Professors of Clinical Education: Mary Andres, Psy.D.; Ruth Gim Chung, Ph.D.; Ginger Clark, Ph.D.; Robert Filback, Ph.D.; Frederick W. Freking, Ph.D.; Michael Genzuk, Ph.D.; Alan G. Green, Ph.D.; Angela Hasan, Ph.D.; Kimberly Hirabayashi, Ph.D.; William E. Maxwell, Ph.D.; Eugenia Mora-Flores, Ph.D.; Gary Scott, Ed.D.; Julie Slayton, Ph.D.; Kathy Stowe, Ed.D.; Denzil Suite, Ph.D. (*Student Affairs*); Tracy Poon Tambascia, Ed.D.; Patricia Tobey, Ph.D. (*Student Affairs*); Kristan M. Venegas, Ph.D.

Assistant Professors of Clinical Education: Shafiqah Ahmadi, J.D.; Uju Anya, Ph.D.; Paula Carbone, Ph.D.; Christian Chun, Ph.D.; Lynne Goldfarb, Ph.D.; Walton Green, M.S.; Courtney Malloy, Ph.D.; Brandon Martinez, Ed.D.; Lynette Merriman, Ed.D. (*Student Affairs*); John Pascarella, Ph.D.; Helena Seli, Ph.D.; Maura Sullivan, Ph.D.; Kenneth Yates, Ed.D.

Assistant (Teaching) Professors of Clinical Education: Corey Barton, Ed.D.; Eric Bernstein, Ph.D., J.D.; Jenifer Crawford, Ph.D.; Monique Datta, Ed.D.; Kimberley Ferrario, Ph.D.; Brooke Howland, Ed.D.; Corinne E. Hyde, Ed.D.; Emmy Min, Ph.D.

Research Professors: David Dwyer, Ph.D.; Jerome Lucido, Ph.D.; Allen Munro, Ph.D.

Research Assistant Professors: Zoe Corwin, Ph.D.; Joanna Smith, Ph.D.

Executives in Residence: Michael Escalante, Ed.D.; Maria Ott, Ph.D.

Lecturers: Priscilla Caraveo, M.A.; Deborah Detzel, M.A.; Paul Dykman, M.S.; Katie Guevara, M.A.; Marge Hocht, M.A.; Pamela Yamamoto Ireland, M.A.; Sonja Lovelace, M.A.; Stephen MacIsaac, M.A.; Kathleen O'Connor, M.A.; Heather Robertson, Ed.D.; Priscilla Taylor, M.A.

Emeritus Professors: Earl Carnes, Ph.D.; Richard Clark, Ed.D.; Myron H. Dembo, Ph.D.; Robert Ferris, Ed.D.; Mabel E. Hayes, Ph.D.; Edward J. Kazlauskas, Ph.D.; Frederick Knirk, Ed.D.; Steven Krashen, Ph.D.; Johanna K. Lemlech, Ed.D.; James Magary, Ph.D.; Merle Marks, Ed.D.; William G. Millington, Ed.D.; William F. O'Neill, Ph.D.; Donald E. Polkinghorne, Ph.D.; William M. Rideout, Jr., Ph.D.; Audrey J. Schwartz, Ed.D.; Robert A. Smith, Ph.D.; Eddie Williams, Ed.D.; Kathleen Wulf, Ph.D.

Emeritus Professor of Clinical Education: Stuart E. Gothold, Ed.D.

Emeritus Professor of Clinical Psychology: Rodney K. Goodyear, Ph.D.

Degree Programs

The Rossier School of Education offers the following degree programs: Master of Arts, Teaching; Master of Arts, Teaching: Teaching English to Speakers of Other Languages; Master of Education, Advanced Instruction; Master of Education, Educational Counseling; Master of Education, Postsecondary Administration and Student Affairs; Master of Education, School Counseling; Master of Education, School Leadership; Master of Marriage and Family Therapy; Doctor of Education/Master of Business Administration (Ed.D./MBA); Doctor of Education (Ed.D.); Global Executive (Ed.D.); and Doctor of Philosophy (Ph.D.) in Urban Education Policy.

Graduate Degrees

Admission

Applicants for admission to graduate degree programs must have a bachelor's degree or its equivalent from an accredited institution. Admission to graduate programs in the Rossier School of Education is highly selective and competitive. A grade point average of 3.0 (A = 4.0) is usually expected as well as satisfactory scores on the Graduate Record Examinations (GRE) General Test and three letters of recommendation. Specific testing and recommendation requirements vary by program. For specific information on admission and application procedures, contact the Office of Admission and Recruitment, (213) 740-0224.

Satisfactory Academic Progress

Students must maintain a grade point average of 3.0 (A = 4.0) or better to stay in good academic standing. Consistent with USC's overall policies for graduate students, factors other than satisfactory grades may also be taken into consideration in decisions regarding a student's continuation in a graduate degree program. These factors include satisfactory performance in fieldwork or credentialing requirements, or meeting program-defined professional standards, which are communicated to students at the beginning of the program.

Students who do not earn or maintain a 3.0 (A = 4.0) grade point average in an academic term will be given an academic warning in the following term. Students may also be given an academic warning if they

are have not fulfilled non-GPA related requirements, as defined by their degree program. The academic warning provides notification that the student is subject to dismissal. A student who is not in good academic standing is subject to dismissal, and may be dismissed from a program whenever, in the judgment of the associate dean for academic programs and the program director of the program in question, it is unlikely that the student will successfully complete his or her program.

Time Limit for Degree Completion

The time limit for completing a master's degree is five years. The time limit for completing a doctoral degree is eight years. For students who earned an applicable master's degree within five years prior to admission to the doctorate, the time limit for completion is six years.

The time limit begins with the first course at USC applied toward a specified degree and ends the semester during which all requirements are met.

A primary consideration of the setting of time limits is the currency of the course work and research with respect to the date the degree is to be conferred. Equally important is the concern that the faculty members serving as advisers or committee members be available to the student for the duration of graduate studies at USC.

Occasionally a student finds it impossible to comply with prescribed time limits for completion of a degree. If a significant delay is likely to occur, the student must make arrangements in advance by petitioning for an extension of time. Such petitions will be considered when there is clear justification based on sound academic or critical personal reasons. An academic department may grant an extension of up to one year at a time for a maximum of two years.

Master's Degrees

Master of Arts in Teaching, Multiple Subject, Single Subject and Single Subject (Music Education)

The Master of Arts in Teaching is designed for individuals who wish to complete requirements for a California preliminary teaching credential or to strengthen their ability to facilitate learning for all students in a K-12 environment (non-credential). Three programs are available: Multiple Subject, Single Subject and Single Subject (Music Education).

Multiple Subject

The MAT Multiple Subject is designed for those interested in teaching at the elementary level. The non-credential option requires a minimum of 30 units; the credential option requires a minimum of 32 units.

Single Subject

The MAT Single Subject is designed for those interested in teaching at the secondary level. The emphasis offers specializations in English, science (biological sciences, chemistry, geoscience or physics), mathematics and social science. The non-credential option requires a minimum of 30 units; the credential option requires a minimum of 32 units.

Single Subject (Music Education)

The MAT Single Subject (Music Education) offers two tracks: choral/general and instrumental. A minimum of 35 units is required.

The Multiple Subject and Single Subject emphases are available online.

CORE COURSES	UNITS
EDUC 501	Instruction for Teaching English as a New Language
EDUC 516	Framing the Social Context of High Needs Schools
EDUC 518	The Application of Theories of Learning to Classroom Practice
EDUC 519	Human Differences

Additional course work for the Bilingual, Cross Cultural, Language and Academic Development (BCLAD) Credential:

EDUC 558	Culture Learning in Schools: Latino	3
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MULTIPLE SUBJECT	UNITS
EDUC 504	Foundations of Literacy Development and Instruction
EDUC 551	Teaching Physical Education
EDUC 554	Visual and Performing Arts in Elementary Subjects
EDUC 556	Integrating English Language Arts and Social Studies
EDUC 566	Teaching Mathematics and Science

Credential Track

EDUC 568ab	Guided Practice	3-3
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Non-Credential Track

EDUC 569ab	Capstone Portfolio in Learning and Instruction	2-2
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SINGLE SUBJECT	UNITS
EDUC 505	Integrating Literacy in Secondary Content Instruction
EDUC 506	New Media Literacies in High Needs Schools

Additional course work in the subject matter area to be approved by the subject area faculty lead

Select one of the following:

EDUC 502ab	Teaching Science in Secondary Classrooms	3-4
EDUC 509ab	Teaching Mathematics in Secondary Classrooms	3-4
EDUC 513ab	Teaching English Language Arts in Secondary Classrooms	3-4
EDUC 541ab	Teaching Social Studies in Secondary Classrooms	3-4

Credential Track

EDUC 568ab	Guided Practice	3-3
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Non-Credential Track

EDUC 569ab	Capstone Portfolio in Learning and Instruction	2-2
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SINGLE SUBJECT (MUSIC EDUCATION)	UNITS
EDUC 512	Reading and Writing Methods for Secondary Teaching
MUED 510	Leading a Music Program in a Public School Setting
MUED 515	Using Technology in the Classroom
MUED 540	Motivation and Discipline in the Music Classroom
MUED 549ab	Directed Teaching: Public School Music

Additional course work for Instrumental Track

MUED 522ab	Teaching Public School Instrumental Music	3-2
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MUED 524	Teaching and Conducting Public School Instrumental Ensembles	4
MUED 526	Teaching General/Choral Music for Instrumentalists	2

Additional course work for Choral/General Track

MUED 532	Teaching General Music K-8	3
MUED 534	Teaching and Conducting Public School Choral Ensembles	4
MUED 536	Teaching Instrumental Music for Vocalists	2
MUED 547	Vocal Pedagogy in the Public School Classroom	2

Master of Arts in Teaching, Teaching English to Speakers of Other Languages

The MAT, Teaching English to Speakers of Other Languages is designed to prepare aspiring English language teachers, domestic and international, to successfully provide instruction for children, youth or adults in the United States or abroad. This is a non-credential option. A minimum of 30 units is required. The program may be completed on campus or online.

REQUIRED COURSES	UNITS
EDUC 501	Instruction for Teaching English as a New Language
EDUC 505	Integrating Literacy in Secondary Content Instruction
EDUC 506	New Media Literacies for High Needs Schools
EDUC 510	Foundations of Learning for the TESOL Classroom
EDUC 516	Framing the Social Context of High Needs Schools, or
EDUC 563	Teaching from a Comparative and International Perspective
EDUC 521	Assessment and Instruction for Diverse English Learners
EDUC 526ab	Capstone in Teaching English Learners, or
EDUC 540ab	Practicum in Teaching English as a Second or Foreign Language
EDUC 561	Teaching English to Speakers of Other Languages Pedagogy I
EDUC 562	Teaching English to Speakers of Other Languages Pedagogy II
EDUC 571	Systems of the English Language

Master of Education, Advanced Instruction

The Master of Education in Advanced Instruction provides current teachers with an in-depth exposure to pedagogy and teacher leadership development. The curriculum is designed to challenge experienced teachers to utilize technology in student-centered ways to improve learning outcomes, provide access to advanced interdisciplinary pedagogical practice, develop their capacity to initiate leadership with peers around improving instruction, and increase their understanding of successful instruction for learners with diverse needs.

Applicants to the program should have significant teaching experience. Public school teachers must hold

a current teaching credential; private school teachers without a credential must be able to demonstrate at least three years of full-time teaching experience. Two letters of recommendation are required.

There are five areas of concentration in the advanced instruction program: (1) Teaching Science, Technology, Engineering, and Mathematics (STEM) in Elementary Schools to support teachers interested in fostering enthusiastic, confident and creative learning; (2) Differing Abilities, which focuses on understanding the range of learner needs in today's classroom; (3) Education Specialist Credential, for graduates of the Rossier MAT program seeking to add a Mild/Moderate Disabilities authorization; (4) Secondary Curriculum concentration provides Social Studies and English teachers with methods for integrating the arts, literacy and civics; and (5) Teaching Science, Technology, Engineering, and Mathematics (STEM) in Secondary Schools provides an opportunity for secondary teachers to engage in an advanced, interdisciplinary study of instruction in STEM.

Degree Requirements

The advanced instruction program requires a minimum of 32 units including required core courses and completion of a concentration area.

REQUIRED CORE	UNITS
EDUC 506 New Media Literacies in High Needs Schools	2
EDUC 516 Framing the Social Context of High Needs Schools	3
EDUC 518 Application of Theories of Learning to Classroom Practice	3
EDUC 529 Political and Academic Issues Affecting Gifted Students	3
EDUC 550 Multimedia Literacy	3
EDUC 564 Teacher Leadership	2
EDUC 569ab Capstone Portfolio in Learning and Instruction	2-2
EDUC 573 Introduction to Special Education	3

Concentration Areas

Students select a concentration area from one of the following:

TEACHING SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM) IN ELEMENTARY SCHOOLS		UNITS
EDUC 581 STEM Education from a Project-Based Learning Approach		3
EDUC 584 Facilitating Creativity and Innovation in STEM Classrooms		3
EDUC 585 Action Research Project		3
DIFFERING ABILITIES		UNITS
EDUC 530 Differentiated Curriculum and Pedagogy for Gifted Students		3
EDUC 575 Assessment and Curriculum for Students with Disabilities		3
EDUC 576 Establishing and Maintaining an Effective Classroom Ecology		3

EDUCATION SPECIALIST CREDENTIAL		UNITS
EDUC 530 Differentiated Curriculum and Pedagogy for Gifted Students		3
EDUC 574 Collaboration, Families and Case Management		3
EDUC 575 Assessment and Curriculum for Students with Disabilities		3
EDUC 576 Establishing and Maintaining an Effective Classroom Ecology		3
EDUC 577 Guided Practice: Mild/Moderate Disabilities		3

THE SECONDARY CURRICULUM		UNITS
EDUC 552 Literacies in the Content Area		3
EDUC 557 Civics Education		3
EDUC 578 Integrating the Arts into the Secondary Curriculum		3

TEACHING SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM) IN SECONDARY SCHOOLS

	UNITS
EDUC 555 STEM Education in Secondary Classrooms	3
EDUC 559 Discourse Analysis and Technology in STEM Classrooms	3
EDUC 580 Transforming STEM Education into Teaching Science	3

Master of Education, Educational Counseling

The Master of Education degree in Educational Counseling is designed for individuals seeking a career or advancement opportunities in postsecondary education as an academic or outreach counselor. The degree includes a theoretical and practical background in student affairs and counseling.

The program meets current requirements for postsecondary counseling positions in the California state system, particularly for those who wish to work in the public community college system. A minimum of 48 units is required.

REQUIRED COURSES	UNITS
EDCO 503 Ethical and Legal Issues in Counseling	3
EDCO 541 Theories in Counseling	3
EDHP 500 Foundations of Higher, Adult, and Professional Education	3
EDHP 552 The Politics of Difference	3
EDHP 563 Student Affairs Work in College	3
EDHP 580 The Community College	3
EDHP 587 Fieldwork in Higher, Adult, and Professional Education	3
EDHP 593ab Master's Seminar, or	
EDHP 594ab Master's Thesis	4
EDHP 687 Student Development in Higher Education	3
EDPT 502 Learning and Individual Differences	3
EDUC 500 The Counseling Process	3
EDUC 508 Creating Communities of Interest	2
EDUC 547 Career Development: Theory and Process	3
EDUC 570 Research Methods and Data Analysis for Counselors	3

EDUC 609 Academic Advising in Postsecondary Education	3
EDUC 637 Group Counseling: Theory and Process	3

Master of Education, Postsecondary Administration and Student Affairs

The Master of Education, Postsecondary Administration and Student Affairs provides current and prospective professionals working in various capacities within two-year, four-year and professional postsecondary institutions with the theoretical foundation and practical applications to excel in a variety of higher education administrative and students services positions (academic advising and support services). Students will have an opportunity to develop an area of proficiency such as student affairs, athletic administration or academic advising. A minimum of 41 units of graduate-level course work is required.

REQUIRED COURSES	UNITS
EDHP 500 Foundations of Higher, Adult, and Professional Education	3
EDHP 551 Applied Educational Ethnography	3
EDHP 552 The Politics of Difference	3
EDHP 563 Student Affairs Work in College	3
EDHP 587 Fieldwork in Higher, Adult, and Professional Education	3
EDHP 594ab Master's Thesis, or	2-2
EDUC 616 Higher Education Seminar	3
EDHP 657 Management of Student Services in Higher Education	3
EDHP 679 Legal Issues in the Administration of Higher Education	3
EDHP 687 Student Development in Higher Education	3
EDUC 508 Creating Communities of Interest	2
EDUC 570 Research Methods and Data Analysis for Counselors	3
Approved electives	9

Master of Education, School Counseling

The Master of Education, School Counseling is geared toward socially responsible individuals who are aware that many of the issues pupils confront have societal origins. Designed to prepare educators interested in becoming school counselors in grades pre-K through grade 12, successful candidates will obtain the Master of Education, School Counseling degree along with USC recommendation for the Pupil Personnel Services School Counseling Credential. Forty-nine units of course work, 100 clock hours in a practicum experience and 600 clock hours of supervised field experience are required.

REQUIRED COURSES	UNITS
EDCO 503 Ethical and Legal Issues in Counseling	3
EDCO 505 Counseling and Collaborative Consultation in the School Setting	3
EDCO 541 Theories in Counseling	3
EDCO 574 School Counseling Practicum	2

EDCO 575	School Counseling Field Experience	4	EDUC 538	Entrepreneurial School Leadership	2
EDUC 500	The Counseling Process	3	EDUC 548	Data-driven Leadership for Schools	3
EDUC 508	Creating Communities of Interest	2	EDUC 549	Supervising Instruction for Optimal Learning	3
EDUC 511	Introduction to Counseling	3	EDUC 565	Global Perspective on School Leadership	1
EDUC 520	Counseling for College and Career Readiness I	2	EDUC 570	Research Methods and Data Analysis for Counselors	3
EDUC 570	Research Methods and Data Analysis for Counselors	3	EDUC 641	Human Capital and School Organization	3
EDUC 600	Counseling for College and Career Readiness II	2	EDUC 643	Advancing Community Support Through Social Media	2
EDUC 607	Role of School Counselors in Student Learning and Motivation	3	EDUC 647	School Leadership Seminar	2
EDUC 608	School Connectedness, Climate, and Classroom Management	2	EDUC 648ab	Apprenticeship in School Administration and Leadership	2-2
EDUC 612	Application of Human Development Theory in School Counseling	3	Total units		31
EDUC 618	School Counseling Professional Portfolio	2			
EDUC 621	Measurement and Evaluation for School Counselors	3			
EDUC 637	Group Counseling: Theory and Process	3			
EDUC 638	Cross-Cultural Counseling: Research and Practice	3			

Master of Education, School Leadership

School leadership matters. The Master of Education in School Leadership will prepare educational leaders with the knowledge and skills to lead effectively in urban school settings and to accelerate student achievement. Graduates will demonstrate that they can create a high achievement school culture and solve complex performance problems in K-12 schools by being able to advocate for a shared community-driven vision; create a high performance school culture and educational goals; collect data to diagnose causes of achievement gaps; plan appropriate research-based solutions; gather and manage resources; effectively communicate the plan to school administration, faculty, staff and community; and provide support for implementing, monitoring and evaluating progress toward achieving school improvement. All courses are taught through field-based experiences where problems are solved in real work settings, applying research to practice. Students who graduate from the program will be ready to work within the constantly evolving educational landscape of California and other states. An international trip is integrated into the program's curriculum.

The program is open to teachers, counselors, psychologists and other school-based personnel who have worked for a minimum of two years in such positions. Two letters of recommendation are required.

The program is only available online.

REQUIRED COURSES		UNITS
EDUC 508	Creating Communities of Interest	2
EDUC 533	School Leadership: Theory and Practice	3
EDUC 537	Leading with the Community and Culture in Context	3

Master of Marriage and Family Therapy

The program for the Master of Marriage and Family Therapy is offered for those students seeking to prepare for the practice of marriage and family therapy. Students who complete this specialized professional degree program and who fulfill the additional state-mandated requirements are eligible for the State of California's Marriage and Family Therapy license. A minimum of 60 units is required.

REQUIRED COURSES		UNITS
EDCO 541	Theories in Counseling Psychology	3
EDUC 500	The Counseling Process	3
EDUC 507	Professional Identity, Law and Ethics for Counselors	3
EDUC 508	Creating Communities of Interest	2
EDUC 515	Theories of Marriage and Family Therapy	3
EDUC 544	Measurement Procedures for Counselors	3
EDUC 546	Psychopathology for Marriage and Family Therapists	3
EDUC 547	Career Development: Theory and Process	3
EDUC 553	Psychopharmacology and the Effects of Substance Abuse	3
EDUC 570	Research Methods and Data Analysis for Counselors	3
EDUC 583	Counseling through the Lifespan	3
EDUC 633	Child and Elder Abuse and Domestic Violence	2
EDUC 634	Couples Counseling	3
EDUC 635	Psychotherapy with Children and Adolescents	3
EDUC 636	Perspectives on Human Sexuality	3
EDUC 637	Group Counseling: Theory and Process	3
EDUC 638	Cross-Cultural Counseling: Research and Practice	3
EDUC 644	Practicum in Counseling	3
EDUC 645ab	Fieldwork in Counseling	3-3
EDUC 646ab	Marriage and Family Therapy Capstone: Leadership Project	1-1

Certificate Programs

Certificate in School Counseling

The School Counseling Certificate program is designed for students enrolled in the Master of Marriage and Family Therapy (MMFT) program who wish to complete additional requirements to earn USC recommendation for a Pupil Personnel Services: School Counseling Credential. Application information is available in the Master's Program Office.

REQUIRED COURSES		UNITS
EDCO 505	Counseling and Collaborative Consultation in the School Setting	3
EDCO 574	School Counseling Practicum	2
EDCO 575	School Counseling Field Experience	4
EDUC 511	Introduction to Counseling	3
EDUC 520	Counseling for College and Career Readiness I	2
EDUC 600	Counseling for College and Career Readiness II	2
EDUC 607	Role of School Counselors in Student Learning and Motivation	3
EDUC 608	School Connectedness, Climate, and Classroom Management	2
EDUC 618	School Counseling Professional Portfolio	2
EDUC 621	Measurement and Evaluation for School Counselors	3
Total units required		26

Certificate in Gifted Education

Aligned with USC Rossier's mission to serve high-need students in urban centers, the Certificate in Gifted Education provides graduates of the Master of Arts in Teaching program with the competencies to respond to the needs, interests and abilities of gifted students in either heterogeneous regular classrooms or specific magnet school classrooms defined for gifted and high-ability students.

The Certificate in Gifted Education enables graduates to recognize the manifestations of giftedness among cultural, linguistic and economically diverse students in urban schools, to facilitate the identification of under-represented students as gifted and to provide differentially appropriate curriculum for them.

REQUIRED COURSES		UNITS
EDUC 529	Political and Academic Issues Affecting Gifted Students	3
EDUC 530	Differentiated Curriculum and Pedagogy for Gifted Students	3
Credential Track		
EDUC 568ab	Guided Practice	3-3
Non-Credential Track		
EDUC 550	Multimedia Literacy	3
EDUC 569ab	Capstone Portfolio in Learning and Instruction	2-2

Certificate in Special Education

The Certificate in Special Education provides graduates of the Rossier School of Education with the competencies to respond to the needs, interests and abilities of special needs students in either regular classrooms or specific school classrooms defined for students with documented learning differences. It widens the range of the graduates' knowledge about teaching and learning allowing them to compete in the contemporary professional marketplace. A certificate in special education is mandatory in some states, and in other states, it is a criterion for consideration to teach special needs students in any type of learning environment. The certificate may be completed concurrently with requirements for the MAT or the M.E. in Advanced Instruction. It is also available online.

REQUIRED COURSES		UNITS
EDUC 573	Introduction to Special Education	3
EDUC 574	Collaboration, Families and Case Management	3
EDUC 575	Assessment and Curriculum for Students with Disabilities	3
EDUC 576	Establishing and Maintaining an Effective Classroom Ecology	3
EDUC 577	Guided Practice: Mild/Moderate Disabilities	3

Certificates in STEM Education

Aligned with the Rossier School of Education mission to serve the changing landscape of high needs and urban school districts, two STEM certificate programs are available to strengthen the instructional skills of novice and current teachers at the elementary or secondary level, so that they can have a positive impact on student learning in mathematics and the sciences. Both certificates widen graduates' knowledge about teaching and learning in order to compete in the contemporary professional marketplace.

Applicants must be currently enrolled in the MAT, M.E. in Advanced Instruction or capstone option of the MAT, or have a prior master of teaching degree and demonstrate three years of teaching experience.

Certificate in Elementary STEM Education

REQUIRED COURSES		UNITS
EDUC 550	Multimedia Literacy	3
EDUC 581	STEM Education from a Project-Based Learning Approach	3
EDUC 584	Facilitating Creativity and Innovation in STEM Classrooms	3
EDUC 585	Action Research Project	3

Certificate in Secondary STEM Education

REQUIRED COURSES		UNITS
EDUC 550	Multimedia Literacy	3
EDUC 555	STEM Education in Secondary Classrooms	3

EDUC 559	Discourse Analysis and Technology in STEM Classrooms	3
EDUC 580	Transforming STEM Education into Teaching Science	3

Dual Degree Program

Doctor of Education/Master of Business Administration

The Rossier School of Education and the USC Marshall School of Business jointly offer a dual degree program that emphasizes educational leadership and management competencies across the wide variety of education-related organizations in the public, non-profit and for-profit sectors and is designed to prepare students to assume executive leadership positions in these organizations, including schools, universities, educating businesses, regional, state and federal education agencies, education research institutions, and private foundations with education missions. Graduates of the Ed.D./MBA program will be prepared to significantly improve the scope and quality of educational services to targeted populations through the application of management skills to the field of education and of education principles to business enterprises.

A total of 90 units is required for the dual degree: 48 units in the Marshall School of Business and 42 units in the Rossier School of Education.

Students must apply to both the Marshall School of Business and the Rossier School of Education.

Doctoral Degrees

The Rossier School of Education offers the Doctor of Philosophy in Urban Education Policy (Ph.D.) and the Doctor of Education (Ed.D.). Both doctoral programs place strong emphasis on the acquisition of inquiry skills and on the collaborative and interdisciplinary study of issues mutually engaging to both students and the Rossier School of Education faculty members. Both degrees emphasize the acquisition of appropriate research and inquiry skills, but the application of these skills is expected to differ. The Ed.D. student is trained to use educational inquiry skills to solve contemporary educational problems, while the Ph.D. student is trained to contribute to the general and theoretical knowledge about educational issues. The Ed.D. is administered by the Rossier School of Education; the Ph.D. is administered by the Graduate School.

Ph.D. students must also consult the Graduate School section of this catalogue for regulations and requirements pertaining to the degree.

Doctor of Education (Ed.D.)

The Doctor of Education (Ed.D.) is a 3-year degree program that equips practitioner-scholars with the skills needed to lead high-performing organizations, connect research with practice and help all students to learn. The program is geared toward working professionals who aspire to be leaders in urban education. Admission requires a master's degree and a minimum of three years of work experience in a related field.

Preliminary Review

The Ed.D. preliminary review must be passed before the student has completed more than 21 units. Passing the preliminary review is prerequisite to continuing in the program.

Advisement Committee

The student selects a three-member advisement committee in consultation with the adviser upon applying to take the qualifying examination.

The committee chair must have a full-time appointment in the Rossier School of Education. One member of the committee may be a faculty member elsewhere or a full-time professional educator holding a doctorate and with strength in the area of the dissertation topic, if nominated by the committee chair and approved by the director of the Ed.D. program.

Areas of Concentration

There are four areas from which students must select a specialization: K-12 Leadership in Urban School Settings, Educational Psychology, Higher Education Administration and Teacher Education in Multicultural Societies.

Unit Requirement

The Ed.D. requires completion of 60 units of course work. A maximum of 4 dissertation units (794 Doctoral Dissertation) may be applied toward the degree. Students admitted with Advanced Standing complete a minimum of 43 units.

Core Program

Ed.D. students are required to complete 14 units of core course work: EDUC 605 Framing Educational Leadership, EDUC 606 International Studies Seminar (which includes 10 days of international travel in the second year), EDUC 522 Challenges in Urban Education: Accountability, EDUC 523 Challenges in Urban Education: Diversity, EDUC 524 Challenges in Urban Education: Leadership, and EDUC 525 Challenges in Urban Education: Learning.

Methods

All Ed.D. students must complete EDUC 532 Inquiry Methods I and EDUC 536 Inquiry Methods II for a total of 6 units.

Research

Students must complete 6 units of research course work (EDUC 792 Critique of Research in Education and EDUC 790 Research).

Electives

In consultation with assigned advisers, students take 13 units of elective course work.

Admission to Candidacy

Admission to candidacy is a formal action taken by the faculty of the Rossier School of Education. That action is based upon passing the qualifying examination.

Doctoral Dissertation

A dissertation based upon original research is required. An acceptable dissertation must show technical mastery of a special field, capacity for independent research

and scholarly ability. The student must be enrolled in 794 Doctoral Dissertation each fall and spring semester after admission to candidacy until the dissertation has been approved. A minimum of two semesters (4 units) is required. Enrollment in 794 prior to admission to candidacy is not permitted and such registration is invalid.

Global Executive (Ed.D.)

The Global Executive Ed.D. curriculum is designed to enhance the professional experience of senior educational leaders and policy makers by:

- Increasing their understanding of global trends and the implications of those trends;
- Challenging them to use evidence and theory-based approaches in problem solving;
- Developing their capacity to effectively use complex data in decision making; and
- Providing access to key leaders and leading educational scholars.

Classes are delivered in Los Angeles and in Hong Kong. The total units required for the degree is 60. A maximum of 4 project units (EDUC 764 Consulting Project) may be applied toward the degree. Students admitted with advanced standing complete a minimum of 50 units.

REQUIRED COURSES		UNITS
EDUC 619	Framing Educational Leadership in a Global Context	4
EDUC 620	Fundamentals of Creativity, Innovation, and Entrepreneurship	2
EDUC 623	Understanding Research That Informs Leadership	2
EDUC 624	Educational Organizations: Governance and Finance I	2
EDUC 626	Fostering Entrepreneurship in Educational Systems	2
EDUC 627	Education Performance Problems: Role of Learning	3
EDUC 628	Educational Organizations: Governance and Finance II	2
EDUC 629	Consulting Practicum Context Analysis	4
EDUC 631	Locating Educational Performance Problems	3
EDUC 723	Evaluating and Assessing Educational System Outcomes	3
EDUC 724	Creating Policy Alternatives for Educational Settings	3
EDUC 725	Analyzing Effectiveness of Educational Systems	3
EDUC 726	Making Choices: Deciding Among Policy Alternatives	4
EDUC 727	Implementing Policy in Educational Systems	3
EDUC 728	Global Trends: Emerging Ideas, Emerging Markets	3
EDUC 729	Assessing Policy Impact in Educational Settings	3
EDUC 764abcdz	Consulting Project	1-1-1-1-0

Additional course work to be approved by program faculty 10

Doctor of Philosophy in Urban Education Policy (Ph.D.)

Program Requirements

The Ph.D. program requires a minimum of 63 units of course work, comprising the following elements: Core Block (16 units), Concentration Block (15 units), Research Block (15 units), Cognate Block (12 units) and Dissertation Proposal and Dissertation Block (5 units).

Core Block

The core represents the essential knowledge that serves as the groundwork for later course work and for other research and scholarly activities within the program and beyond with a particular focus on urban education. This work is completed in the first year of full-time study.

REQUIRED COURSES		UNITS
EDUC 630	Organization and Policy: Current Issues	4
EDUC 640	The Research University in the 21st Century	4
EDUC 642	Controversies in Learning and Instruction	4
EDUC 650	Globalization and the Nation-State: Theories of Change	4

Concentration Block

Courses in this block are linked to two of the four areas of concentrations available in the Rossier School of Education (higher education/community college leadership and leadership in urban education settings). Courses in this block permit students to consider applied problems in collaboration with advanced Ed.D. students.

Research Block

Courses in this block provide the basic tools to pursue systematic, programmatic, empirical investigation. It includes qualitative and quantitative elements with the understanding that complex educational problems require a variety of investigative approaches. Areas required include research design, analysis of variance/multiple regression, qualitative methods, and one elective in measurement, advanced qualitative or quantitative analysis, or a related area. Courses may be taken inside or outside the Rossier School of Education.

Cognate Block

This block is designed for students to pursue interdisciplinary approaches to educational issues, and may consist of courses inside or outside the Rossier School of Education. The specific courses are determined in conjunction with the adviser.

Dissertation Block

This block includes preparation for the qualifying examination and initial dissertation proposal. It is taken during the semester of the qualifying examination and EDUC 794ab Dissertation (minimum of 4 units taken after a student passes the qualifying examination and has advanced to candidacy). The dissertation block is designed to prepare students for their dissertation research and continues through the writing and defense of the dissertation. The process involves intensive

collaboration with the adviser and the qualifying exam committee.

Transfer of Course Work

The maximum number of transfer credits that can be applied toward the degree is 20 units. The faculty of the student's degree program determines whether transfer credit is applicable toward a specific graduate degree.

Faculty Adviser

A designated faculty member provides the academic advisement for entering graduate students at the point of admission. A faculty member is appointed to serve as the adviser until an approved qualifying exam committee is established.

Screening Process

When students have completed the core course work, the doctoral screening committee assesses their performance and makes a decision about their readiness to continue in the program. Students are notified of the results by the Ph.D. program chair. If the decision is to continue, a formal program of studies and a qualifying exam committee is established.

Qualifying Exam Committee

The qualifying exam committee is composed of at least five members. A minimum of three, including the chair, must be from the Rossier School; one must be a faculty member from outside the Rossier School. Normally, all members of the qualifying exam committee are regular faculty with the rank of assistant professor or above in departments offering the Ph.D.

Qualifying Examinations

As a prerequisite to candidacy for the Ph.D., students must pass written and oral qualifying examinations. The written qualifying examination is designed to assess a student's readiness to undertake dissertation research and to assess the student's ability to critically analyze and synthesize theoretical and methodological knowledge. The oral portion consists, in part, of a teaching and research portfolio. The teaching portfolio documents and reflects the student's development and productivity in thinking about course content and instructional delivery. The research portfolio documents and reflects the student's development and productivity in research and writing from the point of entry into the program.

Admission to Candidacy

Admission to candidacy is a formal action taken by the faculty that is based upon passing the qualifying examination and completing all Ph.D. course requirements (with the exception of 794 Doctoral Dissertation). Notification of admission or denial of admission to candidacy is by letter from the associate vice provost for graduate programs.

Dissertation Committee

After admission to candidacy and approval of the dissertation proposal, the Ph.D. qualifying exam committee is known as the dissertation committee and is usually reduced to three members. The committee will include one faculty member from outside the Rossier

School of Education and will be chaired by a tenure track faculty member.

Doctoral Dissertation

After the qualifying examination is passed, students must enroll in 794 Doctoral Dissertation each semester,

except summer session, after admission to candidacy until all degree requirements have been completed. A minimum of two semesters (4 units) is required. A maximum of 4 dissertation units may be applied to satisfy the degree requirement. While enrolled in 794a, students will develop a dissertation proposal in collaboration

with the adviser. The dissertation committee grants final approval for the proposal. Credit for 794a and permission to enroll in 794b will only be given after the dissertation proposal is approved. IRB (Human Subjects Institutional Review Board) approval is required for all dissertation studies.

Credential Programs

A credential is a license issued by the California Commission on Teacher Credentialing (CCTC) to persons wishing to legally teach or perform certain other professional services in California's public schools. USC is one of several institutions authorized to recommend qualified persons to the CCTC for receipt of credentials.

There are two categories of credentials offered in the Rossier School: teaching and service. Requirements for these credentials may be obtained by calling the appropriate phone number listed below. *Credential requirements may change due to state law.* Students are advised to consult periodically with the Rossier School of Education for current credential requirements.

Teaching Credentials

California has a two-tier credential structure. A five-year preliminary credential is the first credential issued after an individual meets basic credential requirements. A clear credential is issued when all credential requirements have been completed.

Multiple Subject Teaching (MST) authorizes the holder to teach in a self-contained classroom such as the classrooms in most elementary schools. A teacher authorized for multiple subject instruction may be assigned to teach in any self-contained classroom (preschool, grades K-12 or many subjects within a self-contained classroom). This classroom situation is generally found in preschool and elementary grades or in classes organized primarily for adults. In addition, the holder of a Multiple Subject Teaching Credential may serve in a core or team teaching setting.

Single Subject Teaching (SST) authorizes the holder to teach a specific subject(s) named on the credential in departmentalized classes such as those in most middle schools academic area. This classroom situation is generally found in middle and senior high schools. A teacher authorized for single subject instruction may be assigned to teach any subject on his or her authorized fields at any grade level: preschool, grades K-12 or in classes organized primarily for adults.

Multiple and Single Subject Teaching with a Bilingual Emphasis in Spanish (BCLAD) authorizes the holder with bilingual capabilities to teach to a bilingual student population.

Both credentials authorize instruction to English learners.

All teacher candidates must meet the following requirements in order to be recommended/endorsed for a teaching credential: successful evidence of completion and passing of the TPA (Teaching Performance Assessment) and verification of training in cardiopulmonary resuscitation (CPR) that covers infant, child and adult CPR skills.

Teacher certification rules and requirements vary greatly by state. Completion of a CCTC-approved program does not guarantee certification or licensure in another state. Prospective teacher candidates are strongly advised to learn about their state's requirements and to review the following accreditation statements:

Indiana

Accredited in Indiana by the Indiana Commission on Proprietary Education (CPE).

Minnesota

The University of Southern California is registered as a private institution with the Minnesota Office of Higher Education pursuant to sections 136A.61 to 136A.71. Registration is not an endorsement of the institution. Registration does not mean that credits earned at the institution can be transferred to all other institutions.

Washington

USC is authorized by the Washington Higher Education Coordinating Board (HECB) and meets the requirements and minimum educational standards established for degree-granting institutions under the Degree-Granting Institutions Act. This authorization is subject to periodic review and authorizes USC to advertise, recruit and offer a student teaching component for the following degree program: Master of Arts in Teaching. Authorization by the HECB does not carry with it an endorsement by the board of the institution or its programs. Any person desiring information about the requirements of the act or the applicability of those requirements to the institution may contact the HECB at P.O. Box 43430, Olympia, WA 98504-3430.

Prospective Washington state students are advised to contact the Office of the Superintendent of Public Instruction at (360) 725-6320 or profed@k12.wa.us to determine whether this education program is approved for teacher certification or endorsements in Washington state. In addition, teachers are advised to contact their individual school district as to whether this program may qualify for salary advancement.

Missouri

USC is approved by the Missouri Coordinating Board for Higher Education to deliver its online program to residents.

Tennessee

USC is authorized by the Tennessee Higher Education Commission. This authorization must be renewed each year and is based on an evaluation by minimum standards concerning quality of education, ethical business practices, health and safety, and fiscal responsibility.

If a complaint is not settled at the institutional level, the student may contact the Tennessee Higher Education Commission, Nashville, TN 37243-0830, (615) 741-5293. If the institution uses a mediation clause in its enrollment agreement, the catalogue must describe the steps required of the student and/or the institution to initiate the mediation process.

For inquiries, contact the MAT@USC office at (213) 743-2127.

Services Credentials

The *Administrative Services Credential* authorizes the holder to provide a variety of services in grades 12 and below, including preschool, and in classes organized primarily for adults. USC recommends candidates for the Clear Preliminary Administrative Services Credential. A prerequisite for admission to this program is admission to the Ed.D. program.

For inquiries, contact the Ed.D. Program Office, (213) 740-9323.

The *Pupil Personnel Services: School Counseling Credential* allows the holder to provide the following services:

- Techniques for facilitating individual growth and development to achieve academic success
- Human assessments
- Problem prevention and early intervention
- Consultation services
- Psychological education
- Coordination and development of school services
- Legal enablement and constraints
- Referral and utilization of services

USC recommends candidates for the School Counseling Credential that also authorizes the holder to perform the following duties:

- Develop, plan, implement and evaluate a school counseling and guidance program that includes academic, career, personal and social development.
- Advocate for the high academic achievement and social development of all students.
- Provide schoolwide prevention and intervention strategies and counseling services.
- Provide consultation, training and staff development to teachers and parents regarding students' needs.
- Supervise a district-approved advisory program as described in California Education Code, Section 40600.

For inquiries, contact the Master's Program Office, (213) 740-3255.

Special Programs

USC Language Academy

Director: Kate O'Connor

The USC Language Academy provides year-round English as a Second Language (ESL) instruction for academic and professional preparation. Students rapidly improve their English skills through non-credit intensive study, campus involvement, and cultural and educational activities.

Instruction is offered at seven proficiency levels and is designed to help students succeed in university classrooms and in life. Distinctive benefits include individualized learning experiences, small class sizes, TOEFL or IELTS test preparation, business English and more.

Students also explore life and culture in Los Angeles through weekly activities arranged by academy staff. The academy arranges student housing in university apartments or residence halls so that students may experience American university life in a comfortable, convenient and safe location and have opportunities to interact with USC students.

The USC Language Academy prepares international students for the next step in their academic or professional careers.

To learn more about programs, contact the USC Language Academy at (213) 740-0080, or email langacad@usc.edu.

Professional Development

Director: Colleen Dietz

The Office of Professional Development Programs offers a variety of non-degree and certificate programs for the education professional.

Certificate programs include: Professional Preparation for Reading, Differentiated Curriculum for Gifted and High-Ability Learners, School Business Management, and School Business for Site Professionals.

Professional Development also offers the two-day Summer Gifted Institute and Teacher Demonstration School intended for teachers of gifted and high-ability learners. Additionally, workshops are provided to new teachers who are in the induction phase of their practice.

The Office of Professional Development Programs provides fully customized programs as well as customized versions of their open enrollment programs. Some key areas of expertise include adult learning; teaching and learning with technology; differentiated curriculum; school district leadership development; and data-driven decision-making. In tandem with the USC Language Academy, the office also supports short-term programming for international students who desire an immersive experience in the education profession.

For further information, contact the Office of Professional Development Programs at (213) 740-7775 or email cdietz@usc.edu.

Courses of Instruction

The terms listed are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

EDUCATION (EDUC)

EDUC 200 Introduction to the Teaching Profession (2) Gateway to the minor in the Teaching Profession and the major in Bachelor of Science in General Studies. Identification and discussion of current issues and trends in schools and the teaching profession. Introduction to the development of a professional portfolio.

EDUC 204L Sociological Foundations of Education (3, FaSp) Introduction to the sociological foundations of education through focused study of schools, teacher-student relations, and classroom processes as they relate to social stratification.

EDUC 205L Child Development and Learning in Schools (3, FaSp) Introduction to processes of development and learning in school aged children, with an emphasis on school contexts.

EDUC 392 Undergraduate Research Methods (2, Sp) (Enroll in AMST 392)

EDUC 409 Foundations of Language Education (3, FaSp) Overview of research and current theories in bilingual, second language, and foreign language instruction.

EDUC 410 The Teaching of Reading and Writing (4, FaSp) Analysis of reading/writing processes; methods/materials for teaching literacy in elementary schools; issues in biliteracy and instruction; classroom observation/participation in small-group instruction. Admission to the major.

EDUC 413 Methods and Models of Instruction for Language Minority Students (2, FaSp) Curriculum materials and teaching strategies for use in successfully teaching language minority students in both elementary and secondary schools.

EDUC 415 Content to Pedagogy: Mathematics in the Elementary School (2, FaSp) Bridging college-level mathematics content and elementary school curricula to design developmentally appropriate mathematics instruction. *Concurrent enrollment:* EDUC 424a or EDUC 424b.

EDUC 416 Content to Pedagogy: Art in the Elementary School (2, Sp) Transformation of content in art to curriculum in the elementary classroom. *Corequisite:* EDUC 424b.

EDUC 417 Content to Pedagogy: From Science Content to Science Curriculum (2, FaSp) An overview of the goals and content of science instruction at the elementary level coupled with appropriate science curricular and pedagogical models. *Concurrent enrollment:* EDUC 424a or EDUC 424b.

EDUC 418 Content to Pedagogy: From Social Sciences to Social Studies (2, FaSp) Content, concepts, methods, and values for integrating the social sciences in the social studies. *Concurrent enrollment:* EDUC 424a or EDUC 424b.

EDUC 419 Content to Pedagogy: P.E. for Elementary Students (2, Sp) Transformation of content in Physical Education to curriculum in the elementary classroom. *Corequisite:* EDUC 424b.

EDUC 424ab Curriculum and Methods in Elementary Education (2-2, FaSp) Curriculum materials and teaching procedures in the elementary school. *Prerequisite:* EDUC 410; *concurrent enrollment:* a: EDUC 425a; b: EDUC 425b.

EDUC 425ab Observation and Directed Teaching in Elementary Schools (3-3, FaSp) Observation and experience in teaching under supervision in elementary schools (one semester at the kindergarten-primary level and one semester in the intermediate or upper grades). *Concurrent enrollment:* a: EDUC 424a; b: EDUC 424b.

EDUC 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

EDUC 499 Special Topics (2-4, max 8, FaSp) Seminar in selected topics in education. Specific topics to be determined at the time seminar is offered.

EDUC 500 The Counseling Process (3) Theoretical foundations, models, values, and assumptions underlying psychological counseling; cross-cultural perspectives, ethical and legal considerations. (Duplicates credit in former EDCO 500.) *Concurrent enrollment:* EDUC 507.

EDUC 501 Instruction for Teaching English as a New Language (3, FaSpSm) Teaching linguistically and culturally responsively to linguistic minority students. Topics include learning theories, sociocultural contexts of language development, and assessment of language and non-language competencies. (Duplicates credit in EDUC 543ab.) Open only to MAT and MAT (online) students.

EDUC 502ab Teaching Science in Secondary Classrooms (3-4, FaSpSm) Strategies, methods, and materials for teaching science to all learners in secondary classrooms. b: (Duplicates credit in EDUC 539.) Open only to MAT Single Subject and Single Subject (online) students.

EDUC 504 Foundations of Literacy Development and Instruction (2, FaSpSm) Application of a balanced, integrated, interactive perspective to teaching reading in an elementary classroom. Foundational skills needed in the developmental phase of learning to read. Open only to MAT Multiple Subject and Multiple Subject (online) students.

EDUC 505 Integrating Literacy in Secondary Content Instruction (2, FaSpSm) Facilitation, mediation and intervention in the development of literacy and language integrated within the content areas. Connection between language and literacy to developing content knowledge. Open only to MAT Single Subject, Single Subject (online), TESOL and TESOL (online) students.

EDUC 506 New Media Literacies in High Needs Schools (2, FaSpSm) Instructional procedures and resources for encouraging secondary students' interests in communications, cultural studies, media production, and literacy education. Open only to MAT Single Subject, Single Subject (online), TESOL and TESOL (online) students.

EDUC 507 Professional Identity, Law and Ethics for Counselors (3) History of the field of counseling and professional identity development for counselors are addressed. Examination of current legal, ethical, and other professional issues in counseling. *Concurrent enrollment:* EDUC 500.

EDUC 508 Creating Communities of Interest (2, FaSpSm) Framing the graduate experience for master's students. Establishing a professional foundation and philosophy as educators.

EDUC 509ab Teaching Mathematics in Secondary Classrooms (3-4, FaSpSm) Strategies, methods, and materials for teaching mathematics to all learners in secondary classrooms. *b:* (Duplicates credit in EDUC 545.) Open only to MAT Single Subject and Single Subject (online) students.

EDUC 510 Foundations of Learning for the TESOL Classroom (3, FaSpSm) Relationship of learning theories to second language learning and to student assessment, motivation, self-regulation, and classroom management in the TESOL classroom. Open only to MAT TESOL and TESOL (online) students.

EDUC 511 Introduction to Counseling (3, Fa) The role of the school counselor. An overview of key elements in increasing access to and equity for primary and secondary education for all students.

EDUC 512 Reading and Writing Methods for Secondary Teaching (2, Fa) Analysis of reading/writing processes; methods for teaching literacy in grades 9–12; issues in biliteracy and instruction.

EDUC 513ab Teaching English Language Arts in Secondary Classrooms (3-4, FaSpSm) Strategies, methods, and materials for teaching English to all learners in secondary classrooms. *b:* (Duplicates credit in EDUC 535.) Open only to MAT Single Subject and Single Subject (online) students.

EDUC 514 School Counseling Seminar (3, Sp) Current issues and problems in school counseling; emphasis is on K–12 learning and achievement.

EDUC 515 Theories of Marriage and Family Therapy (3) Major psychotherapeutic orientations relating to family systems, marital relationships, and communications theory applied to the family unit. (Duplicates credit in former EDCO 515.) *Prerequisite:* EDUC 500, EDUC 507, EDCO 541.

EDUC 516 Framing the Social Context of High Needs Schools (3, FaSpSm) Introduction to the Master of Arts in Teaching Program. Relationship between the actions of the teacher and student learning in the classroom and school context. (Duplicates credit in EDUC 517ab.) Open only to MAT and MAT (online) students.

EDUC 517ab Understanding the Social Context of Urban Schools (2-2, FaSpSm) Examination of critical issues in diverse contemporary classrooms (social class, language, race, ethnicity, and ability); includes practices in relation to schools and community. Open only to MAT and MAT (online) students.

EDUC 518 Application of Theories of Learning to Classroom Practice (3, FaSpSm) Learning theories and instructional practices for teaching. Procedures involved in curriculum development, planning, evaluation, and practical application. Open only to MAT and MAT (online) students.

EDUC 519 Human Differences (3) Equity and diversity in learning environments. Issues in teaching special populations. Beliefs about how people learn. Inclusive environment for special populations in the general classroom. Open only to MAT and MAT (online) students.

EDUC 520 Counseling for College and Career Readiness I (2, Fa) Theoretical foundations of individual and systemic characteristics that impact college and career choices. Consideration of economic, political, social, and policy issues.

EDUC 521 Assessment and Instruction for Diverse English Learners (3, FaSpSm) Assessment practices and strategies in English language instruction with special attention to learner differences (social, cultural, physical, intellectual) that influence academic performance. Open only to MAT TESOL and TESOL (online) students.

EDUC 522 Challenges in Urban Education: Accountability (3, Sp) Issues related to accountability theory and practice in urban education settings. Open only to Ed.D. students.

EDUC 523 Challenges in Urban Education: Diversity (3, Fa) Diversity issues in urban educational settings. Open only to Ed.D. students.

EDUC 524 Challenges in Urban Education: Leadership (3, Sp) Theories, principles, and concepts of leadership in urban K–12 schools and institutions of higher education. Open only to Ed.D. students.

EDUC 525 Challenges in Urban Education: Learning (3, Fa) Theory and research in learning, motivation, and instruction for diverse educational settings. Open only to Ed.D. students.

EDUC 526ab Capstone in Teaching English Learners (2-2, FaSpSm) The culminating experience for in-service teachers in the Master of Arts in Teaching, Teaching English to Speakers of Other Languages Program. Open only to MAT TESOL and TESOL (online) students. Graded CR/NC.

EDUC 527 Assessment in the Language Classroom (2, Sm) Introduces students to relevant research in language assessment, reviews concepts of reliability and validity and examines assessment practices in the classroom.

EDUC 528 Course Proposal Project (2, Sm) Using a framework of course development, students present a course proposal, linking the theoretical, methodological and practical principles gained from all course work in the program.

EDUC 529 Political and Academic Issues Affecting Gifted Students (3, FaSpSm) Examination of the political and academic issues affecting gifted and high-ability students. Psychosocial reasons contributing to achievement and underachievement. Institutional and personal factors inhibiting potential. Open only to MAT students.

EDUC 530 Differentiated Curriculum and Pedagogy for Gifted Students (3, FaSpSm) Recognizing the talent and potential of gifted and high ability students. How gifted education can be generalized to affect the education of all students. Open only to MAT students.

EDUC 531 Student Disability Issues in Higher Education (3, Fa) History of the disability movement; current research on the success of students with disabilities in higher education; legal and management issues.

EDUC 532 Inquiry Methods I (3, Sp) Logic and methods of quantitative data analysis in the examination of educational issues and the framing of solutions for them. Open only to Ed.D. students.

EDUC 533 School Leadership: Theory and Practice (3, Fa) Theories and principles of leadership and the application of principles to solve authentic problems in elementary and secondary schools.

EDUC 535 Teaching Secondary English and Language Arts (4, FaSpSm) Instructional procedures, techniques, strategies, and resources for teaching English in secondary classrooms. Open only to MAT students.

EDUC 536 Inquiry Methods II (3, Sp) Logic and methods of qualitative data analysis in the examination of educational issues and the framing of solutions for them. Open only to Ed.D. students. *Prerequisite:* EDUC 532.

EDUC 537 Leading with the Community and Culture in Context (3, Sp) Creating a positive culture of learning to promote student success. Strategies to engage diverse communities.

EDUC 538 Entrepreneurial School Leadership (2, Fa) Entrepreneurial opportunities in education. Developing the skills and knowledge for entrepreneurial leadership to improve educational outcomes.

EDUC 539 Teaching Secondary Science (4, FaSpSm) Instructional procedures, techniques, strategies, and resources for teaching science in secondary classrooms. Open only to MAT students.

EDUC 540ab Practicum in Teaching English as a Second or Foreign Language (2) The culminating experience for beginning teachers in the Master of Arts in Teaching, Teaching English to Speakers of Other Languages Program. Open only to MAT TESOL and TESOL (online) students. Graded CR/NC.

EDUC 541ab Teaching Social Studies in Secondary Classrooms (3) Strategies, methods, and materials for teaching social studies to all learners in secondary classrooms. *a:* (Duplicates credit in former EDUC 534.) *b:* (Duplicates credit in former EDUC 542b.) Open only to MAT Single Subject and Single Subject (online) students.

EDUC 542 Teaching Secondary Social Studies (4, FaSpSm) Instructional procedures, techniques, strategies, and resources for teaching social studies in secondary classrooms. Open only to MAT students.

EDUC 543ab Methods in Teaching English as a New Language (1-1) Teaching linguistically and culturally responsively to linguistic minority students. Topics include learning theories, sociocultural contexts of language development, and assessment of language and non-language competencies. Open only to MAT students. (Duplicates credit in former EDUC 543.)

EDUC 544 Measurement Procedures for Counselors (3) Educational and psychological instruments; psychometric concepts and the rationale for the use of psychological instruments in the counseling relationship. (Duplicates credit in former EDCO 544.)

EDUC 545 Teaching Secondary Mathematics (4, FaSpSm) Instructional procedures, techniques, strategies, and resources for teaching mathematics in secondary classrooms. Open only to MAT students.

EDUC 546 Psychopathology for Marriage and Family Therapy (3) Theories of psychological impairment emphasizing diagnosis of child and family dysfunction. Practice in utilizing DSM-IV classification of case studies. (Duplicates credit in former EDCO 546.)

EDUC 547 Career Development: Theory and Process (3) Theories and process of career development; principles of career and leisure planning and counseling applicable throughout life. (Duplicates credit in former EDCO 548.)

EDUC 548 Data-Driven Leadership for Schools (3, Sm) Analyzing, interpreting, and using data to increase effectiveness of instruction and programs, improve student learning, and reduce or eliminate the achievement gap.

EDUC 549 Supervising Instruction for Optimal Learning (3, Sm) Application of adult learning theory to evaluate instruction. Appropriate professional development to improve student achievement.

EDUC 550 Multimedia Literacy (3, FaSpSm) Applying new technology in the classroom. Exploration of the use of multimedia tools to increase literacy. Examination of multiple forms of technology to facilitate learning. Open only to MAT and Gifted Education Certificate students.

EDUC 551 Teaching Physical Education (1, FaSpSm) Instructional approaches for integrating physical education content across the elementary curriculum. Open only to MAT students.

EDUC 552 Literacies in the Content Area (3, FaSpSm) Literacy and language within content areas. Developing reading, writing, speaking and listening skills for real audiences. Academic language.

EDUC 553 Psychopharmacology and the Effects of Substance Abuse (3, Sp) Focus on the effects of psychotropic medication, alcohol, and other substances on behavior. The professional and ethical issues for marriage and family therapists.

EDUC 554 Visual and Performing Arts in Elementary Subjects (2, FaSpSm) Instructional approaches for integrating visual and performance arts content across the elementary curriculum. Open only to MAT students.

EDUC 555 STEM Education in Secondary Classrooms (3, FaSpSm) Developing innovative practices in designing inquiry-based lesson plans to facilitate integrating the STEM disciplines as a foundation for teaching.

EDUC 556 Integrating English Language Arts and Social Studies (5, FaSpSm) Strategies and methods for integrating English language arts in social studies classrooms. Reinforces the concept of social studies as a conduit to further student learning. (Duplicates credit in EDUC 567.) Open only to MAT Multiple Subject and Multiple Subject (online) students.

EDUC 557 Civics Education (3, FaSpSm) Uses of pedagogical practices for increasing student engagement in the study of history and civics. Becoming critical thinkers, problem solvers, and effective citizens.

EDUC 558 Culture Learning in Schools: Latino (3) History, values, beliefs, and the demography of Spanish-speaking people; implications for the American classroom. Conducted in Spanish.

EDUC 559 Discourse Analysis and Technology in STEM Classrooms (3, FaSpSm) Using multiple assessment strategies and technology to assess mathematical and scientific thinking and performance.

EDUC 560 Primary Language Instruction in a Bilingual Setting (3, Fa) Bilingual programs, their goals, personnel, teaching methods, and materials.

EDUC 561 Teaching English to Speakers of Other Languages Pedagogy I (3) Overview of approaches in Teaching English to Speakers of Other Languages and methods for teaching reading, writing, listening, speaking, along with grammar, vocabulary, and pronunciation. Open only to MAT TESOL and TESOL (online) students.

EDUC 562 Teaching English to Speakers of Other Languages Pedagogy II (4) Introduction to micro-components of effective teaching, including curriculum and lesson planning, lesson sequencing and delivery, and creating a classroom environment conducive to English language learning.

EDUC 563 Teaching from a Comparative and International Perspective (3, FaSpSm) Examines the social context of schooling from a comparative and international perspective, connections between cultural beliefs and societal values; issues of social stratification and marginalization.

EDUC 564 Teacher Leadership (2, FaSpSm) Strategies of leadership that lead from influencing learning in the classroom to influencing learning across an entire school. Becoming an instructional leader.

EDUC 565 Global Perspective on School Leadership (1, Sm) Cultural, political, and economic issues pertinent to urban education in the global context. School leaders as global educators.

EDUC 566 Teaching Mathematics and Science (4, FaSpSm) Instructional approaches for integrating mathematics and science with other content areas in elementary and secondary classrooms. Open only to MAT students.

EDUC 567 English and Language Arts in Elementary Social Studies (4, FaSpSm) Integrating English and language arts development with learning in elementary social studies classrooms. Factors affecting the teaching and learning of social studies and language arts. Open only to MAT students.

EDUC 568ab Guided Practice (3-3) Supervised practicum in observation and teaching. Focus on planning, implementing, and assessing instruction for whole classes and individual students. Open only to MAT students. Graded CR/NC. (Duplicates credit in former EDUC 568.)

EDUC 569ab Capstone Portfolio in Learning and Instruction (2-2) The culminating experience in the Master of Arts in Teaching Program for students in the non-credential track. Open only to MAT students. (Duplicates credit in former EDUC 569.)

EDUC 570 Research Methods and Data Analysis for Counselors (3) Various research designs and their appropriateness for addressing different research questions. Threats to validity and other challenges in research. Basic statistical methods and their use. *Recommended preparation:* beginning statistics course.

EDUC 571 Systems of the English Language (3) Exploration of English language systems including words, sounds, sentence structure, and discourse and application of this knowledge to teaching English as second or foreign language.

EDUC 572ab Teaching in an International and Intercultural Context (2-2, Fa) Examines social context of education from an international and intercultural perspective, linkages between societal values, culture, and schooling, and implications for the role of teachers.

EDUC 573 Introduction to Special Education (3, FaSpSm) Effective and appropriate educational settings for students with disabilities. Legal and professional responsibilities. Components for an inclusive classroom.

EDUC 574 Collaboration, Families and Case Management (3, FaSpSm) Planning and implementing effective educational services for students receiving special education services. Potential interventions for family support. Coordination of services.

EDUC 575 Assessment and Curriculum for Students with Disabilities (3, FaSpSm) Developing effective educational interventions for students with disabilities. Formal and informal assessment. Curriculum strategies.

EDUC 576 Establishing and Maintaining an Effective Classroom Ecology (3, FaSpSm) Environmental and personal factors affecting student achievement. Intervention methodologies. Creating an effective learning environment.

EDUC 577 Guided Practice: Mild/Moderate Disabilities (3, FaSpSm) Supervised practicum in observation and teaching. Focus on planning, implementing, and assessing instruction for whole classes and individual students with mild/moderate disabilities.

EDUC 578 Integrating the Arts into the Secondary Curriculum (3, FaSpSm) Methods for integrating the arts into secondary classroom instruction. Critical and creative thinking, aesthetic education.

EDUC 580 Transforming STEM Education into Teaching Science (3, FaSpSm) The convergence of science, technology, engineering, and mathematics (STEM) as a foundation for teaching science.

EDUC 581 STEM Education from a Project-Based Learning Approach (3, FaSpSm) Model-based reasoning and inquiry as a means of integrating STEM disciplines.

EDUC 583 Counseling through the Lifespan (3) Developmental issues and life events from infancy to old age and their effect upon individuals, couples, and family relationships.

EDUC 584 Facilitating Creativity and Innovation in STEM Classrooms (3, FaSpSm) The role of creativity in STEM education. Theories and approaches to facilitating creative and innovative thinking.

EDUC 585 Action Research Project (3, FaSpSm) Design and implementation of a STEM-based project.

EDUC 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

EDUC 593ab Master's Seminar (2-2) An examination and analysis of research and literature in the student's area of focus. Graded IP/CR/NC. (Duplicates credit in former EDCO 593ab.)

EDUC 594abz Master's Thesis (2-2-0) Credit on acceptance of thesis. Graded IP/CR/NC.

EDUC 599 Special Topics (1-4, max 9, FaSpSm) Selected topics in various areas of education.

EDUC 600 Counseling for College and Career Readiness II (2, Fa) Planning and implementing theoretical foundations of college and career counseling. The application of contextually relevant strategies for assisting in college and career choices.

EDUC 605 Framing Educational Leadership (1, Fa) Critical analysis and creative expression applied to problems of practice. Supported and unsupported assertions. Evidence-based decision-making. The quality of evidence used to support arguments. Graded CR/NC. Open only to doctoral students.

EDUC 606 International Studies Seminar (1, FaSpSm) Analyzing educational challenges and opportunities in international and global contexts. Understanding the global context of international education and issues facing international and global urban education. Course includes an overseas trip. Open only to doctoral students. Graded CR/NC.

EDUC 607 Role of School Counselors in Student Learning and Motivation (3, FaSpSm) The process of identifying and assessing learning and motivational issues in schools, the application of research-based interventions, and the evaluation of effectiveness of these interventions.

EDUC 608 School Connectedness, Climate, and Classroom Management (2, Fa) Prevention, education, and training for achievement. Data collection for assessment and evaluation of school climate, crisis and classroom management conducive to learning and success.

EDUC 609 Academic Advising in Postsecondary Education (3, Fa) Contemporary issues in academic advising in postsecondary education. Examines and analyzes relevant theories, policies, and practices related to academic advising.

EDUC 610 Higher Education Administration in China (3, Sm) Examination of student affairs and higher education administration practices in the People's Republic of China. Course concludes with a trip to China.

EDUC 611 Athletic Administration (3, Sp) Analysis and discussion of critical issues in intercollegiate athletics. Student-athlete academic and social accountability; challenges of NCAA policies; commercialization, marketing, and fundraising in college athletics.

EDUC 612 Application of Human Development Theory in School Counseling (3, FaSpSm) A theoretical perspective of human development across the lifespan. Issues and challenges faced by school counselors.

EDUC 613 Gender Issues in Athletic Administration (3, Sp) Overview of Title IX and gender issues in institutions of higher education and implications for public schools.

EDUC 614 Research and Assessment in Higher Education (3, Sm) Theory and practice of outcomes assessment, program evaluation, and research design in postsecondary educational administration.

EDUC 615 Ethics in Athletic Administration (3, Fa) Ethical concerns in intercollegiate athletics. Review, analysis, and discussion of ethical and moral conduct in sports. Relevance of social justice to ethical behaviors.

EDUC 616 Higher Education Seminar (3, FaSp) Capstone seminar course focused on the future of student affairs and higher education.

EDUC 617 The Student Athlete in Higher Education (3, Fa) Examination of student athletes in higher education. Effective strategies for counseling and advising college student athletes; issues and challenges of athletic amateurism.

EDUC 618 School Counseling Professional Portfolio (2, Fa) Preparation of an electronic resource portfolio that addresses a field based practice. The culminating experience for the M.Ed., School Counseling program.

EDUC 619 Framing Educational Leadership in a Global Context (4, Sm) Globalization as a distinct phenomenon. Assessment of impact of globalization on educational systems and institutions. Open only to doctoral students.

EDUC 620 Fundamentals of Creativity, Innovation, and Entrepreneurship (2, Sm) The genesis and facilitation of creative ideas in educational practice. The transformation of creativity into innovation and entrepreneurship. Open only to doctoral students.

EDUC 621 Measurement and Evaluation for School Counselors (3, Fa) The use of formal and informal assessments to improve student achievement and well-being. Use of assessment data for intervention and evaluation.

EDUC 622 Educational Theory and Instructional Design (2, Fa) Theories and elements of learning. Application in educational settings. Methodology for course development and evaluation. Emphasis on strategies, tools, and use of technology.

EDUC 623 Understanding Research That Informs Leadership (2, Fa) Understanding, interpreting, and applying education research. Open only to doctoral students.

EDUC 624 Educational Organizations: Governance and Finance I (2, Fa) Overview of economic concepts of education. Linkages between economic growth, development, and education. Impact of globalization. Open only to doctoral students.

EDUC 625ab Induction Plan and Assessment of Candidate Competence (1-1, FaSpSm) The development of an individualized induction plan and assessment of competence for meeting requirements for the Clear Administrative Services Credential. (EDUC 625a duplicates credit in former EDUC 595; EDUC 625b duplicates credit in former EDUC 596.) Graded CR/NC.

EDUC 626 Fostering Entrepreneurship in Educational Systems (2, Fa) The role of entrepreneurship in education and conditions that support entrepreneurship within an educational organization. How social entrepreneurship partnerships improve educational outcomes. Open only to doctoral students.

EDUC 627 Education Performance Problems: Role of Learning (3, Sp) Contemporary perspectives on learning and motivation. Strategies and tools for identifying, diagnosing, and solving learning and motivational challenges and opportunities. Open only to doctoral students.

EDUC 628 Educational Organizations: Governance and Finance II (2, Sp) Diversification and differentiation of educational institutions globally. The finances of higher education. Open only to doctoral students. *Prerequisite:* EDUC 624.

EDUC 629 Consulting Practicum Context Analysis (4, Sp) Preparation, design, and analysis of an education-related problem. Open only to doctoral students.

EDUC 630 Organizations and Policy: Current Issues (4, FaSp) Study of contemporary issues in educational organizations, policy and change in K-12 and higher education with an explicit focus on the improvement of urban education. Open to students admitted to the Ph.D. only.

EDUC 631 Locating Educational Performance Problems (3, Sp) Development and implementation of strategies for locating, solving and evaluating solutions to performance problems in educational organizations. Open only to doctoral students.

EDUC 632 Technology in Higher Education (2, Sm) The integration of technology in higher education and the relationship to quality of teaching, access to learners, and cost-effectiveness for universities and colleges.

EDUC 633 Child and Elder Abuse and Domestic Violence (2) A review of laws governing mandated reporting of child and elder abuse, the procedures involved, as well as etiology, effects, and treatment interventions.

EDUC 634 Couples Counseling (3) Examines relational development and change, strategies for intervention with couples, and selected issues in couples relationship functioning. *Prerequisite:* EDUC 500, EDUC 507, EDCO 541.

EDUC 635 Psychotherapy with Children and Adolescents (3) Training in unique diagnostic considerations in working with children and adolescents. Exposure to empirically supported treatment modalities for children and adolescents. (Duplicates credit in former EDCO 554.) *Prerequisite:* EDUC 500, EDUC 507, EDCO 541.

EDUC 636 Perspectives on Human Sexuality (3) The physiological-psychological and socio-cultural variables associated with sexual identity and sexual behavior with an emphasis upon sexual dysfunctions. (Duplicates credit in former EDCO 516.) *Prerequisite:* EDUC 507.

EDUC 637 Group Counseling: Theory and Process (3) Theory, research, and practice of group counseling. Includes laboratory experience. (Duplicates credit in former EDCO 542.) *Prerequisite:* EDUC 500, EDUC 507, EDCO 541.

EDUC 638 Cross-Cultural Counseling: Research and Practice (3) An examination of the cultural, socioeconomic, and language factors that may affect culturally differentiated populations; alternative cross-cultural counseling approaches. (Duplicates credit in former EDCO 551.)

EDUC 640 The Research University in the 21st Century (4, FaSp) An examination of the current transformation of the American research university with a focus on key issues that confront academics who work in research universities. Open to students admitted to the Ph.D. only.

EDUC 641 Human Capital and School Organization (3, Fa) School leadership, organization, management and development of school personnel. Capitalizing on school resources to meet school goals.

EDUC 642 Controversies in Learning and Instruction (4, FaSp) An introduction to learning research and theory, issues in learning and educational psychology situated in the context of diverse, urban settings. Open to students admitted to the Ph.D. only.

EDUC 643 Advancing Community Support through Social Media (2, Fa) Use of social media to communicate school vision. Incorporating objectives, strategies, assessment, and accountability measures in communication plans.

EDUC 644 Practicum in Counseling (3) Supervised clinical work with clients, including adults, couples, children, and families. (Duplicates credit in former EDCO 560.) *Prerequisite:* EDUC 500, EDUC 507, EDUC 546, EDCO 541.

EDUC 645ab Fieldwork in Counseling (3-3) Supervised field experience in a clinical setting. Graded CR/NC. (Duplicates credit in former EDCO 561.) *Prerequisite:* EDUC 644.

EDUC 646ab Marriage and Family Therapy Capstone: Leadership Project (1-1, FaSp) An evidence-based leadership project, designed to enhance fieldwork site functioning. Includes needs assessment, literature review, project design, implementation, and evaluation.

EDUC 647 School Leadership Seminar (2, Sp) Planning, design, and development of an action research plan for school improvement using multiple measures of project assessment.

EDUC 648ab Apprenticeship in School Administration and Leadership (2-2, FaSp) Supervised field experience in administrative areas of K-12 schools. Development of Administrative Services Portfolio.

EDUC 650 Globalization and the Nation-State: Theories of Change (4, FaSp) The impact of globalization on educational public policies and practices: an examination of technology, information and communications, and their influence on transnational and national politics. Open to students admitted to the Ph.D. only.

EDUC 653 Advanced Qualitative Research (3, Sp) Interactive seminar that explores the theoretical underpinnings and practicalities of interviews, portraiture, focus groups, life histories, and cultural biographies. *Recommended preparation:* introductory statistics.

EDUC 657 Social Foundations of Research (3, Fa) Foundations in social science research with exposure to broad cross-section of research methods, design, and analytical techniques. Open only to doctoral students.

EDUC 658 Hierarchical Linear Models (3, Fa) Application of two- and three-level multilevel models in educational settings, fixed and random effects, growth models. *Recommended preparation:* a working understanding and knowledge of regression analysis and related Stata software.

EDUC 689 Fiscal Support and Expenditure in Higher Education (3, Sp) Analyses of private and public financial support and expenditure patterns; includes recent trends in state and federal legislation related to higher education.

EDUC 700 Research and Practice in the Preparation of Teachers (3) Research on the preparation of teachers for diverse populations. Measures of teacher quality and student achievement. Existing practices in teacher education from multiple perspectives.

EDUC 701 Pedagogy in Teacher Education (3) A critical examination of pedagogical practices in teacher education. The design of pedagogical approaches and programs for diverse and underserved students in urban schools.

EDUC 702 Curriculum, Teacher Preparation, and Student Learning (3) The process and role of curriculum in a variety of urban settings, teacher preparation, and professional growth. The philosophical and psychological foundations of curriculum development. Open to doctoral students only.

EDUC 703 Examining Literacy Theories and Practice (3) Literacy theories as practiced in urban, teacher education and professional development settings using an inquiry approach to examine best practice. Open to doctoral students only.

EDUC 704 Evaluation and Assessment in Teacher Education (3, Fa) Evaluation and assessment in the context of public schools, teacher preparation and professional growth in urban settings. Policy implications of data-based decision making and program implementation.

EDUC 706 Proseminar in Higher Education (3) Critical issues in urban higher education from historical and philosophical perspectives.

EDUC 707 Administration in Higher Education (3, Fa) Administrative issues in higher education. Academic leadership related to undergraduate and graduate education. Quality standards and assessment. How administrators create efficiency, effectiveness, performance, and change.

EDUC 708 Advanced Student Development Theory (3, Fa) Examination of traditional and emergent student development theories.

EDUC 709 Finance in Higher Education (3) Local, national, and global economic and policy environments and their effect on institutional policies and practices.

EDUC 710 Assessment, Organizational Learning and Performance (3) The role of assessment in higher education. An analysis of the purpose and value of particular assessment approaches and instruments, in particular those addressing classroom learning and institutional effectiveness.

EDUC 711 Social Factors Influencing Learning and Motivation (3) Social psychological principles and research techniques applied to educational problems; school environment, group behavior, teacher effectiveness, teacher-student interaction, behavioral change. Open to doctoral students only.

EDUC 712 Issues in Human Motivation (3) Analysis of motivational principles; diagnosis and solutions to motivation gaps in learning environments; and motivation and efficacy theories and principles. Open to doctoral students only.

EDUC 713 Issues in Lifespan Development (3) An examination of issues related to the development of diverse students and the development of environments that promote motivated behavior. Open to doctoral students only.

EDUC 714 Measurement and Evaluation for Decision-Making (3, Sm) Collecting, analyzing, and using quantitative data to solve problems of practice and in evaluating educational institutions, programs, and policies. Open only to doctoral students.

EDUC 715 Current Research in Learning (3) Current research in the application of learning theories, and the applicability of this research across a variety of contexts. Open to doctoral students only.

EDUC 716 Instructional Leadership (3, Sm) Examines the role of instructional leaders in improving student performance; current issues in curriculum design and implementation; and effective instructional leadership approaches for school improvement. (Duplicates credit in former CTSE 688.) Open only to doctoral students.

EDUC 717 Schooling as an Economic Enterprise (3, Fa) Applying economic theory to the study of education. Application of market theory to education, partnerships, allocation of resources, and the examination of educational enterprises. (Duplicates credit in former EDPA 615.) Open only to doctoral students.

EDUC 718 Maximizing Human Resources in Education (3, Sm) Strategically understanding the management of human capital to ensure high student performance. How to attract and retain top quality teachers. (Duplicates credit in former EDPA 610.) Open only to doctoral students.

EDUC 719 The Policies and Politics of Education Governance (3, Fa) Major issues facing educators in the 21st century. Emphasis on how educational policy can focus on incentives for schools to improve student learning. (Duplicates credit in former EDPA 613.) Open only to doctoral students.

EDUC 720 Leadership for Principals (3, Sm) The role of the principal as an instructional leader with a focus on improving student achievement. (Duplicates credit in former EDPA 600.) Open only to doctoral students.

EDUC 721 Leadership for Superintendents (3, Sm) The role of the superintendent in establishing a focus on student achievement and holding school sites accountable. How superintendents support student learning through leadership. (Duplicates credit in former EDPA 618.) Open only to doctoral students.

EDUC 723 Evaluating and Assessing Educational System Outcomes (3, Sm) Evaluating impact. Examination of key assessment theories; planning and implementation of learning and program effectiveness. Open only to doctoral students.

EDUC 724 Creating Policy Alternatives for Educational Settings (3, Sm) Effective policy-making and constructing alternatives. Open only to doctoral students.

EDUC 725 Analyzing Effectiveness of Educational Systems (3, Fa) Organizational change and development in the context of educational settings. How change and reform occur. How to foster change and transformation. Open only to doctoral students.

EDUC 726 Making Choices: Deciding Among Policy Alternatives (4, Fa) Models of decision making including cost-benefit analysis, risk-benefit analysis, and decision analysis. Ethical considerations and the political environment. Open only to doctoral students.

EDUC 727 Implementing Policy in Educational Systems (3, Sp) Effective policy-making. Human and financial resources to support implementation. Targeting resources to support implementation to attain policy goals. Open only to doctoral students.

EDUC 728 Global Trends: Emerging Ideas, Emerging Markets (3, Sp) Examination of a range of emerging markets in education. Global efforts of institutions of higher education to access new markets through collaborations and offshore endeavors. Open only to doctoral students.

EDUC 729 Assessing Policy Impact in Educational Settings (3, Sp) Theory and practice of educational policy evaluation. Limits of rationality and the political forces that shape policy. Preparation of an evaluation design. Open only to doctoral students.

EDUC 764abcdz Consulting Project (1-1-1-1-0, FaSpSm) Credit on acceptance of consulting project. Graded CR/NC. Open only to doctoral students. *Prerequisite:* EDUC 629.

EDUC 790 Research (1-12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

EDUC 791 Proposal for Doctoral Dissertation (1, FaSpSm) Preparation of initial dissertation proposal. Graded CR/NC.

EDUC 792 Critique of Research in Education (3, FaSp) A survey and critical analysis of selected research and literature. Graded CR/NC. Open to students admitted to the Ed.D. only.

EDUC 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSp) Credit on acceptance of dissertation. Graded IP/CR/NC.

EDUCATION COUNSELING (EDCO)

EDCO 030x The Process of Paraprofessional Counseling for Young Adults (2, Sp) Explores the theoretical processes involved in paraprofessional counseling with specific application to issues faced by young adults. Graded CR/NC.

EDCO 324m Asian American Psychology (4, Sp) Psychological issues of Asian Americans such as cultural identity, intergenerational conflict, stereotypes, interracial dating and marriage, educational achievement, and mental health.

EDCO 503 Ethical and Legal Issues in Counseling (3, Sp) Examination of current legal, ethical, and other professional issues in the practice of counseling and psychotherapy. *Prerequisite:* EDUC 500.

EDCO 504 Behavior Management in the Classroom (3, Sp) Analysis of student behavior in school settings. Emphasis is on a problem-solving functional approach to behavioral changes.

EDCO 505 Counseling and Collaborative Consultation in the School Setting (3, Sp) Theory and practice of collaborative consultations provided by school counselors and school psychologists to improve student achievement and the learning environment.

EDCO 506 Development, Administration and Evaluation of Pupil Personnel Services (3, Fa) Develop skills in the evaluation and management of pupil personnel services programs in the public schools for comprehensive support of student learning and achievement.

EDCO 541 Theories in Counseling (3, FaSp) Theory, research, and practice of psychological counseling. *Corequisite:* EDUC 500.

EDCO 574 School Counseling Practicum (1-2, max 2, FaSpSm) Supervised practice in school counseling. Graded CR/NC. *Prerequisite:* EDCO 503, EDCO 541.

EDCO 575 School Counseling Field Experience (1-4, max 4, FaSpSm) Supervised field experience in applying knowledge and skills within a K-12 school setting. Graded CR/NC. *Prerequisite:* EDCO 574.

CURRICULUM, TEACHING AND SPECIAL EDUCATION (CTSE)

CTSE 593ab Master's Seminar (2-2, FaSpSm) An examination and analysis of research and literature from the student's area of focus. Required of all master's candidates who do not enroll in the Master's Thesis (594abz). Graded CR/NC.

EDUCATIONAL POLICY, PLANNING AND ADMINISTRATION (EDPA)

EDPA 308 Politics and American Education (4, FaSp) Historical study of political, legislative, judicial decisions that have shaped American education; interaction of educators, courts, legislative bodies; emphasis on in-depth analysis of current issues.

EDPA 612 Qualitative Methods in Educational Research (3, SpSm) Overview of the assumptions, methods and techniques of qualitative educational research; discussion and application of analytical tools derived from anthropology, sociology, history, and related social sciences.

EDUCATIONAL PSYCHOLOGY AND TECHNOLOGY (EDPT)

EDPT 110 Motivation and Learning Strategies (4, FaSp) Applying research in cognitive psychology and motivation theory to improve students' learning in different academic disciplines.

EDPT 310 Parental Influences on Children's Educational Development (4, FaSp) Basic principles and theories of child development and learning with emphasis on parent-child, parent-school, and child-school relationships.

EDPT 502 Learning and Individual Differences (3, FaSpSm) Theory and research in learning, development, and individual differences, and social psychology related to education or training contexts.

EDPT 520 Human Lifespan Development (3, FaSp) Fundamentals of human physical, motor, mental, social, and emotional development, spanning the prenatal period through late adulthood.

EDPT 540 Introduction to Educational Measurement and Evaluation (3, FaSp) Survey of theories, concepts, and procedures for assessing intellectual and non-intellectual characteristics and for evaluating individual and program performances.

EDPT 550 Statistical Inference (3, FaSpSm) Application of statistical techniques in education; emphasis on underlying principles and concepts coupled with selected inferential techniques using desk-top computer software.

EDPT 570 Language and Cultural Diversity in Learning (3, Fa) Analysis of current research and theory regarding the influences of language and culture on learning and cognition, with a special focus on academic achievement and instructional transactions.

EDPT 571 Instructional Design (3, FaSp) Formulation and design of effective instruction; emphasis on analysis of media characteristics and instrumentation requirements.

EDPT 576 Technology in Contemporary Education and Training (3, FaSp) Development and scope of instructional technology and its role in modern educational and training systems; overview of instructional development; innovation and trends in the field.

EDPT 642 Measurement Theory (3, Fa) Mathematical concepts and psychometric theory underlying test construction and interpretation; emphasis on current research in the area. *Prerequisite:* EDPT 652.

EDPT 652 Multiple Regression (3, Sp) Multiple regression, factorial analysis of variance, path analysis. *Prerequisite:* introductory statistics.

EDPT 654 Multivariate Statistical Techniques (3, FaSpSm) Multivariate statistical procedures in the analysis of behavioral inquiries; particular emphasis on multivariate analysis of variance. *Prerequisite:* EDPT 652.

EDPT 655 Advanced Research Methods in Education (3, Sp) Focuses on principles of research design in education including literature synthesis, formulation of research problem and questions, selection of methodology and integration of research proposal. *Prerequisite:* EDPT 550.

HIGHER AND POSTSECONDARY EDUCATION (EDHP)

EDHP 500 Foundations of Higher, Adult, and Professional Education (3, Fa) Contemporary issues in higher, adult, and professional education in the United States; analytic perspectives from various disciplines (history, philosophy, sociology); implications for policy and practice.

EDHP 502 Administration of Higher, Adult, and Professional Education (3, Sp) Policies and theories for governance and management. Relations between historical and contemporary organizational processes in postsecondary education. Critique and applications of current research.

EDHP 503 Curriculum, Teaching, and Learning in Higher, Adult, and Professional Education (3, Sp) Curriculum, teaching, and learning strategies for general, vocational, and professional education; planning for lifelong learning; theories, policies, and practices for higher, adult, and professional education.

EDHP 551 Applied Educational Ethnography (3, Fa) Research for improving leadership in higher, adult, and professional education. Ethnographically motivated field designs, observations, focused and unstructured interviews and unobtrusive techniques.

EDHP 552 The Politics of Difference (3) Explores strategies for restructuring institutions of higher education to improve student support and achievement among historically marginalized groups.

EDHP 560 Feminist Theory (4, FaSpSm) (Enroll in SWMS 560)

EDHP 563 Student Affairs Work in College (3, Fa) Principles, services, and organizational patterns of student affairs programs and services for two-year, four-year and professional higher education institutions.

EDHP 565 Intervention Strategies in College Student Development (3, Sp) Exploration of current campus issues such as violence, diversity and academic remediation, and their related intervention strategies (policy-based, programmatic, and counseling-based).

EDHP 580 The Community College (3, SpSm) The community college movement; history; aims; curriculum; types of administrative organization; teaching procedures; relation to lower and higher institutions; profiles of faculty and students; evaluation.

EDHP 587 Fieldwork in Higher, Adult, and Professional Education (1-8, max 8, FaSpSm) Structured participation in supervised teaching or administrative activities. Assignments matched with student's goals, training, experience. Graded CR/NC. *Recommended preparation:* EDHP 563, EDHP 565.

EDHP 593ab Master's Seminar (2-2, FaSpSm) An examination and analysis of research and literature in the student's area of focus. Required for all master's candidates who do not enroll in the Master's Thesis (594abz). Graded CR/NC.

EDHP 594abz Master's Thesis (2-2-0, FaSpSm) Required for all master's candidates who do not enroll in the Master's Seminar (593ab). Credit on acceptance of thesis. Graded IP/CR/NC.

EDHP 657 Management of Student Services in Higher Education (3, Sp) Delivery of student services and programs in higher education, organizational behavior, management systems, administrative procedures, and alternative leadership styles.

EDHP 679 Legal Issues in the Administration of Higher Education (3, Sm) Analysis of legal issues related to the administration of higher education; emphasis on relations with students, faculty, staff, alumni, and campus communities. *Prerequisite:* EDHP 500 or appropriate experience.

EDHP 687 Student Development in Higher Education (3, Sp) Theories of college student development and application of developmental models to program design, interventions, outreach, and research programs.



Ranked by U.S. News & World Report ninth on its list of the best graduate engineering schools, the USC Viterbi School of Engineering emphasizes innovation, research and professional training — enabling students to meet technical and creative challenges. Here members of the USC Engineers Without Borders chapter put those skills to good use on a trip to Honduras, where they provided clean water to rural villages through dam construction and a rainwater catchment system.

Courses in engineering were first offered at USC in the 1905–06 academic year in the basement of one of the oldest buildings on campus. Today, 177 full-time, tenure track faculty (and more than 250 total full-time faculty) serve about 2,400 undergraduates and 4,400 graduate students, utilizing extensive and technically advanced laboratories, classrooms and live interactive high-speed Internet broadcast systems. Government and industry annually fund nearly \$174 million worth of research.

USC Viterbi is innovative, elite and internationally recognized for creating new models of education, research and commercialization that are firmly rooted in real world needs. The school's first priorities are the education of outstanding students and the pursuit and publication of new research.

As the school's faculty and students extend the frontiers of engineering knowledge through their research, they also apply engineering and technology to address societal challenges. The school stimulates and encourages qualities of scholarship, leadership, ambition and character that mark the true academic and professional engineer — to serve California, the nation and the world. At USC Viterbi, we call this the enabling power of Engineering+.

Viterbi undergraduate support programs complement and strengthen the academic experience, enhancing both depth and scope. Viterbi graduate education is outstanding preparation for advanced research and professional careers. The Ph.D. program is built around fellowships, teaching assistantships and research appointments, and produces a steadily growing core of doctoral graduates across the disciplines. The master's and professional programs are national and global leaders in advanced training for professional engineers.

Administration

Yannis C. Yortsos, Ph.D., *Dean*
 John O'Brien, Ph.D., *Executive Vice Dean*
 Maja Matarić, Ph.D., *Vice Dean*
 James E. Moore II, Ph.D., *Vice Dean*

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 Cauligi Raghavendra, Ph.D., *Vice Dean*
 Linda Rock, M.A., *Vice Dean*
 Herbert Schorr, Ph.D., *Vice Dean*

Kelly Goulis, M.S., *Senior Associate Dean*
 Louise A. Yates, M.S., *Senior Associate Dean*
 David Murphy, *Chief Financial Officer*

Degrees and Requirements

The Viterbi School of Engineering offers the following undergraduate curricula leading to the Bachelor of Science in: Aerospace Engineering; Applied Mechanics; Astronautical Engineering; Biomedical Engineering; Chemical Engineering; Civil Engineering; Computer Engineering and Computer Science; Computer Science; Computer Science/Business Administration; Computer Science (Games); Electrical Engineering; Environmental Engineering; Industrial and Systems Engineering; Mechanical Engineering; and Physics/Computer Science.

Minor programs are offered in: Applied Computer Security; Astronautical Engineering; Computer and Digital Forensics; Computer Science; Construction Planning and Management; Craniofacial and Dental Technology; Engineering Management; Engineering Technology Commercialization; Enterprise Information Systems; Environmental Engineering; Innovation: The Digital Entrepreneur; Interactive Multimedia; Materials Science; Petroleum Engineering and Polymer Science; 3-D Animation; Video Game Design and Management; Video Game Programming; Web Technology and Applications.

Graduate curricula leading to the Master of Science in: Aerospace and Mechanical Engineering (Computational Fluid and Solid Mechanics); Aerospace and Mechanical Engineering (Dynamics and Control); Aerospace Engineering; Astronautical Engineering; Biomedical Engineering; Biomedical Engineering (Medical Imaging and Imaging Informatics); Chemical Engineering; Civil Engineering; Civil Engineering (Construction Engineering); Civil Engineering (Structural Engineering); Civil Engineering (Transportation Engineering); Civil

Engineering (Transportation Systems); Civil Engineering (Water and Waste Management); Computer Engineering; Computer Science; Computer Science (Computer Networks); Computer Science (Computer Security); Computer Science (Data Science); Computer Science (Game Development); Computer Science (High Performance Computing and Simulations); Computer Science (Intelligent Robotics); Computer Science (Multimedia and Creative Technologies); Computer Science (Software Engineering); Electrical Engineering; Electrical Engineering (Computer Networks); Electrical Engineering (Electric Power); Electrical Engineering (Multimedia and Creative Technologies); Electrical Engineering (Telecommunications); Electrical Engineering (VLSI Design); Electrical Engineering (Wireless Health Technology); Engineering Management; Environmental Engineering; Financial Engineering; Green Technologies; Health Systems Management Engineering; Industrial and Systems Engineering; Manufacturing Engineering; Materials Engineering; Materials Science; Mechanical Engineering; Mechanical Engineering (Energy Conversion); Mechanical Engineering (Nuclear Power); Medical Device and Diagnostic Engineering; Operations Research Engineering; Petroleum Engineering; Petroleum Engineering (Geoscience Technologies); Petroleum Engineering (Smart Oilfield Technologies); Product Development Engineering; and Systems Architecting and Engineering.

Graduate curricula leading to the Master of Construction Management and Master of Cyber Security.

Graduate curricula leading to the Engineer degree in: Aerospace Engineering; Astronautical Engineering;

Chemical Engineering; Civil Engineering; Electrical Engineering; Industrial and Systems Engineering; Materials Science; Mechanical Engineering; and Petroleum Engineering.

Through the Graduate School, graduate curricula leading to the Doctor of Philosophy in: Aerospace Engineering; Astronautical Engineering; Biomedical Engineering; Chemical Engineering; Civil Engineering; Computer Engineering; Computer Science; Electrical Engineering; Engineering (Environmental Engineering); Industrial and Systems Engineering; Materials Science; Mechanical Engineering; and Petroleum Engineering.

Graduate certificates in: Astronautical Engineering; Engineering Technology Commercialization; Health, Technology and Engineering; Health Systems Operations; Network Centric Systems; Smart Oilfield Technologies; Software Architecture; Systems Architecting and Engineering; and Transportation Systems.

Undergraduate Program Accreditation

The Bachelor of Science degrees in aerospace engineering, astronautical engineering, biomedical engineering, chemical engineering, civil engineering, computer engineering and computer science, electrical engineering, environmental engineering, industrial and systems engineering, and mechanical engineering are accredited by the Engineering Accreditation Commission of ABET, abet.org. The Bachelor of Science degrees in computer engineering and computer science and in computer science are accredited by the Computing Accreditation Commission of ABET, abet.org.

Undergraduate Degrees

Change of Major to Engineering

USC undergraduate students who have not been admitted to the Viterbi School of Engineering may apply to add an engineering major with the approval of the Associate Dean for Admission for the Viterbi School. Students seeking approval to add an engineering major must complete required prerequisite courses and submit a Request to Change Major to Engineering form to the Admission and Student Affairs Office in Ronald Tutor Hall 110. Approval is granted on the basis of academic performance at USC and in the required prerequisite courses in the Viterbi School within a specific number of semesters.

Non-engineering students may complete a maximum of four engineering courses. No further engineering courses may be taken unless admission has been approved.

Common Requirements

Certain general requirements are common to all undergraduate curricula for Bachelor of Science degrees in Engineering. These are as follows:

Total Units

A minimum total of 128 acceptable units is required to earn the Bachelor of Science in Engineering. Exceptions are: biomedical engineering with an emphasis in electrical engineering, 133 units; biomedical engineering with an emphasis in mechanical engineering, 132 units; chemical engineering, 129 units; chemical engineering with an emphasis in biochemical engineering, 133 units; chemical engineering with an emphasis in environmental engineering, 132 units; chemical engineering with an emphasis in nanotechnology, 128 units; chemical engineering with an emphasis in petroleum engineering, 133 units; chemical engineering with an emphasis in polymer/materials science engineering, 133 units; civil engineering, 131 units; civil engineering with an emphasis in building science, 135–36 units; civil engineering

with an emphasis in environmental engineering, 130 units; civil engineering with an emphasis in structural engineering, 131 units; computer science/business administration, 135 units; computer science (games), 128 units; electrical engineering, 131 units; environmental engineering, 131–134 units.

Not more than 4 units may be physical education activity courses, provided the department allows it in the program.

General Education Requirements

The university's general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. This program requires six courses in different categories, plus writing and diversity requirements, which together comprise the USC Core. See pages 63xx and 250xx for more information. In addition, students pursuing a degree in computer science must meet the foreign language requirement described on page 252xx.

The provost has allowed an exception to the rules governing the general education program for students in the Viterbi School of Engineering, who may elect to satisfy the requirement for Category IV with a "wild card" course, which may be a second course in Categories I, II or VI, or with a score of 4 or 5 on the Advanced Placement U.S. History exam.

Students in the engineering "3-2" program are not required to satisfy general education requirements and the WRIT 140 or WRIT 130 requirement; these students are understood to have satisfied USC's general education requirements when they have satisfied the general education requirements and lower level writing requirement at their previous institution. All students must, however, complete the WRIT 340 requirement.

Students in aerospace, astronautical and mechanical engineering complete Social Issues and WRIT 130 in different semesters.

In all other respects, students in the Viterbi School of Engineering must satisfy the general education requirements as described on pages 63xx and 250xx.

Mathematics (16 units minimum)

Sixteen units or more, including three semesters of calculus, are required.

Basic Sciences (12 units minimum)

Twelve units or more of biology, chemistry or physics are required.

Residence Requirement

All students must complete a minimum of 64 units at USC in order to receive a USC degree. In addition, the Viterbi School of Engineering requires that students complete all upper division units required for the major in residence.

For students in the Viterbi School of Engineering "3-2" Program, at least 48 units must be earned in courses taken at USC.

Scholarship Requirement in Major Subject

For graduation with a bachelor's degree, a grade point average of C (2.0) or higher is required in all upper division courses applied toward the major including any approved substitutes for these courses taken at USC. Additional scholarship requirements for the various majors are listed under the departmental headings.

Grade Point Requirement

A grade point average of at least 2.0 is required on all course work attempted at USC.

Transfer students must meet these averages, both on residence work attempted and on combined transferred and residence courses attempted.

Probation/Disqualification

A student whose overall GPA falls below 2.0 is placed on academic probation. Continued enrollment requires clearance from an academic review counselor.

Each semester, students on academic probation are required to receive academic advisement. Proof of advisement must be filed with the Academic Review Department before any registration requests will be processed. The only acceptable proof of advisement is an official academic review advisement record signed

by the student's academic adviser and a representative from the Viterbi Admission and Student Affairs Division. Academic review advisement forms may be obtained from Tutor Hall of Engineering (RTH) 110 or John Hubbard Hall 113.

Students on probation are encouraged to utilize the academic services (advisement and free tutoring) provided by the Viterbi Admission and Student Affairs Division.

Students on academic probation who do not raise their overall GPA to 2.0 after two semesters of enrollment (excluding summers) will be academically disqualified from the university. However, if a student earns a minimum semester GPA of 2.3 in the second or any subsequent probation semester but has not yet reached an overall 2.0 GPA, the student will not be disqualified and will be allowed to enroll an additional semester.

Petitions for readmission after academic disqualification are initiated by the student through the Academic Review Department. All grade issues (IN, MG, etc.) must be resolved prior to the submission of such a petition. Before petitioning for readmission, a student must complete a minimum of 12 semester units of transferable course work (applicable to USC degree requirements) with a minimum 3.0 GPA. University residency requirements will determine whether these units are accepted as transfer credit.

As readmission to the university is never guaranteed, any indication of strong academic performance beyond the 12 unit minimum would strengthen a readmission petition.

Students must petition for readmission by December 30 for the spring semester, by May 1 for the summer session and by August 15 for the fall semester. Late petitions will not be accepted. A non-refundable fee determined by the Academic Review Office must accompany all readmission petitions.

Special Educational Opportunities

Viterbi Admission and Student Affairs Division

The Viterbi Admission and Student Affairs Division, located in Ronald Tutor Hall of Engineering (RTH) 110, begins to assist students as soon as they express an interest in engineering and continues working with them until, and in some cases after, they graduate.

The office is not only responsible for working with prospective students, but with continuing students as well. It directs special services and programs, provides a variety of support services, sponsors student organizations, is involved with student government and acts as a liaison with other university offices.

The Viterbi Admission and Student Affairs Division enables engineering students to have a successful experience at USC.

Center for Engineering Diversity and Women in Engineering Office (WIE)

The Center for Engineering Diversity (CED) provides a variety of services for historically underrepresented students in engineering (African-American, Hispanic and Native American students, including women). Prior to their first semester in Viterbi, freshmen can participate in a four-week summer residential program (Summer Institute).

Contact the Center for Engineering Diversity at (213) 740-1999 for more information.

The Women in Engineering Office (WIE) offers professional, academic and co-curricular support to the women of the Viterbi School. The goal of the Viterbi Women in Engineering Office is to recognize the unique challenges that female engineering students will face, provide resources and overall support to address these challenges, and allow our female students to find academic and personal success during their Viterbi career and beyond.

Klein Institute for Undergraduate Engineering Life

The Klein Institute for Undergraduate Engineering Life (KIUEL) was established to provide Viterbi undergraduates with a variety of personal and professional activities designed to enhance undergraduate engineering student life experiences outside the classroom. KIUEL plans programs around leadership, service learning and globalization, and cross-disciplinary learning. Past KIUEL events have included the KIUEL Weekend for Leaders, the KIUEL Showcase and the Senior Design Expo. For more information, visit viterbi.usc.edu/kiuel.

Merit Research Program

Every year, a select group of promising incoming freshmen are invited by faculty to work on projects in their research laboratories. These student researchers actively participate in the development of new technology throughout their undergraduate careers.

In addition to giving students excellent first-hand experience, this program can help offset the cost of education since each participant earns wages for his or her work. This renewable award is separate from other financial assistance offered by the university.

The student must apply for renewal of his or her award by March 1 of each year. Continuing students can use the same application form to apply for the award starting in their sophomore year.

First Year Excellence

The First Year Excellence (FYE) program helps first-year students develop strong connections to the university and the Viterbi school. FYE promotes academic exploration and success through its co-curricular programs, support services and resources during students' first year. Freshman academies, introductory courses and the Viterbi Spotlight Series help guide students as they explore engineering. Academic advisers work with all freshman students to ensure they are on track academically and to assist with acclimating to college life and USC. Free tutoring, group-led supplemental instruction sessions, workshops and seminars on time management and networking with faculty are available to students to assist them in accomplishing their goals.

Viterbi Career Services

The Viterbi School of Engineering provides extensive career services to all students. Students are encouraged to register with Viterbi Career Services their first year at USC. By doing so, they will be kept informed of all career-related events such as company information sessions, career preparation workshops, industry luncheons and career fairs. In addition, students are able to participate in the school's extensive on-campus interview program.

USC's Viterbi School of Engineering attracts employers not only from Southern California, but from across the country. A few of the many companies that have recently hired Co-ops, interns and permanent employees from the Viterbi school include: Accenture, Amgen, Alcon Laboratories, Inc., Chevron Corporation, Cisco Systems, Inc., Clark Construction, Google, Hewlett-Packard Development Company, L.P., IBM, Intel, Jet Propulsion Laboratory, Kiewit Corporation, Lockheed Martin Corporation, Microsoft Corporation, Morley Builders, NASA, Northrop Grumman Corporation, Parsons Corporation, Raytheon, Turner Construction Company, Walt Disney Imagineering and Yahoo.

Cooperative Education

By participating in the Co-op Program, students can earn degree credit and industry work experience before they graduate. Co-op improves students' understanding of the relationship between theory and practice, helps them fine tune their career goals and aids in the acquisition of important engineering skills. Students' work assignments are closely related to their specific degree program and are appropriate to their current academic level.

Participation in the program is open to all full-time undergraduate engineering majors. Students are eligible to apply for Co-op the second semester of their sophomore year. Though the sequence may vary, students typically have one summer work experience in addition to one semester immediately preceding or following one of the summer sessions. While on assignment, students enroll in a 1–2 unit course (ENGR 395) that aids in the integration of both on-campus and off-campus learning. With departmental approval, credit toward a degree may be earned upon completion of this course.

3-2 Program

For those students wishing greater depth and breadth in the liberal arts, the Viterbi School of Engineering has developed agreements with more than 20 liberal arts colleges nationwide in which a student attends a liberal arts institution for his or her first three years of college, pursuing pre-engineering courses in addition to a solid program in the liberal arts. At the end of the three years, upon recommendation from the liberal arts college, the student enters the Viterbi School of Engineering as a junior and, in two years, completes the remaining

requirements for a B.S. degree. After these five years are complete, the student will receive two degrees — a B.A. from the liberal arts college and a B.S. from USC.

Engineering Overseas Programs

Every summer the Viterbi School of Engineering sponsors a seven-week academic program in either Florence, London, Paris, Madrid, Rome or another location that provides students with the opportunity to enroll in engineering and humanities courses, as well as participate in a directed studies project. This program is open to all engineering majors.

International Exchange Programs

The Viterbi School of Engineering International Exchange Program gives undergraduate students the opportunity to broaden their exposure to the global context of engineering theory and practice by spending a semester abroad in a challenging academic environment at an international host institution. The International Exchange Program allows students to satisfy technical electives and/or approved degree requirements by attending approved partner institutions. This program is open to students entering their junior or senior year. Students apply at the Viterbi Student Affairs Office. Candidates must meet all admission requirements of both the Viterbi School of Engineering as well as those of the international host institution. Contact the Admission and Student Affairs Office for a complete list of international exchange partners.

Honor Societies

The Viterbi School of Engineering has established a variety of honor societies to recognize academic excellence, creativity and service. These are: Alpha Pi Mu (industrial and systems engineering), Chi Epsilon (civil engineering), Eta Kappa Nu (electrical engineering), Omega Chi Epsilon (chemical engineering), Omega Rho (industrial and systems engineering), Pi Tau Sigma (mechanical engineering), Sigma Gamma Tau (aerospace engineering), Tau Beta Pi (nationwide honor society), and Upsilon Pi Epsilon (computer science).

Minor in Engineering Technology Commercialization

The undergraduate minor in engineering technology commercialization is interdisciplinary in nature, requiring courses from both the business and engineering

schools and providing education in the economic, technological and management aspects of commercializing new engineering ideas. Business courses include those in technology entrepreneurship, case studies in new ventures and an elective in business plans. Engineering courses cover engineering economy and engineering law. There is also a dean's seminar jointly taught by the business and engineering schools. Elective courses in technologically specific areas of commercialization, such as biomedical devices, are also included.

This program is especially suited to engineering majors.

A minimum of 16 units is required for the minor. Courses required for a student's major that are listed below are not included in the unit total.

REQUIRED COURSES (15 UNITS)		UNITS
BAEP 452	Cases in Entrepreneurship	4
BUAD 301	Technical Entrepreneurship	3
CE 404	Business and Intellectual Property Law for Engineers	3
ENGR 493x	Dean's Seminar in Entrepreneurship	2
ISE 460	Engineering Economy	3
ELECTIVE COURSES (2–4 UNITS)		UNITS
BAEP 454	The Entrepreneurial Business Plan	4
BME 416	Development and Regulation of Medical Products	3
ISE 344	Engineering Team Management	3
ISE 440	Work, Technology, and Organization	3
ISE 490x	Directed Research	2-3

Directed research units can be in any department and supervised by any faculty but must be approved by the faculty chair of USC Stevens Institute for Innovation, a dean within the engineering school or a designate identified by an engineering dean to count toward this minor. This ensures that the directed research is relevant to technology commercialization.

Graduate Degrees

General Requirements

The Viterbi School of Engineering recommends candidates for the Master of Science degree in: aerospace engineering, astronautical engineering, biomedical engineering, chemical engineering, civil engineering, computer engineering, computer science, electrical engineering, environmental engineering, financial engineering, green technologies, health systems management engineering, industrial and systems engineering, manufacturing engineering, materials engineering, materials science, mechanical engineering, medical device and diagnostic engineering, operations research

engineering, petroleum engineering, product development engineering, sustainable infrastructure systems, systems architecting and engineering, engineering management, and construction management. Several areas of emphasis and specialization are available within these disciplines.

All graduate work in the Viterbi School of Engineering is under the jurisdiction of the Viterbi School except the Doctor of Philosophy degree, which is under the jurisdiction of the USC Graduate School. All prospective graduate engineering students should apply to the USC Office of Graduate Admission.

Admission

Two classes of students are admitted to take courses for graduate credit: admitted and conditionally admitted students. These classifications are determined by the Office of Graduate Admission on the recommendations of the appropriate department in the Viterbi School of Engineering.

Admitted Students This is the status of a graduate student pursuing work leading toward an advanced degree. The student has been accepted into the degree program without any conditions.

Conditionally Admitted The chair of a major department in the Viterbi School of Engineering may recommend that a student be admitted under certain conditions. Conditional admission is granted when a student's admission records are incomplete or when deficiency courses must be taken but the student appears to be otherwise admissible. The conditions must be met before the completion of two semesters of enrollment or 12 units of course work, whichever comes first. If the conditions on admission are not met within the given time period, the student may not be allowed to register for course work in subsequent semesters. When the conditions have been met, the academic department will remove the restrictions that have been placed on the student's registration.

Criteria

In order to qualify for admission, applicants are expected to present strong academic records and show superior accomplishment in their engineering and related courses. Admission decisions will be based on Graduate Record Examinations test scores and transcripts of previous school work. Individual departments may set higher admission standards than the Graduate School. In some departments letters of recommendation and a statement of purpose are required and should be sent directly to the department office. Doctor of Philosophy applicants who have published professional papers in their field may forward copies to the department, and they will be considered together with the other credentials submitted.

Procedure

Applicants to graduate programs must present credentials to the Office of Graduate Admission showing that they have completed an acceptable curriculum for the bachelor's degree. In some departments students with outstanding records will be admitted for the doctoral program without first receiving the Master of Science degree. If the previous degree is not in the field in which the student wishes to pursue graduate study, it may be necessary to make up undergraduate deficiencies in the area of the desired specialty. Applicants must take the Graduate Record Examinations. Satisfactory scores on the general test are required for admission to full graduate standing in most programs. Consult the department office for further information.

Once the application for admission has been sent, arrangements should be made immediately to have official transcripts of all previous undergraduate and graduate school work forwarded directly to the USC Office of Graduate Admission from the schools attended. If the Graduate Record Examinations general and subject tests, as well as the TOEFL or IELTS exams, have been taken the scores should be sent to the Office of Graduate Admission by arrangement with the Educational Testing Service. If the tests have not been taken, the applicant should register to take them on the earliest available date. The departments will review the application files and select for admission those students offering the greatest promise for completing graduate studies.

Progressive Degree Programs

The progressive degree program allows qualified undergraduate students the opportunity to complete an integrated program of study joining a bachelor's degree

program and a master's degree program in the same or different departments. Applicants for a progressive degree program must have completed 64 units of course work applicable to their undergraduate degree since graduating from high school. (Credit by exam and course work taken prior to high school graduation are excluded). Applicants must submit their application prior to completion of 96 units of course work. Normally, the application is submitted in the fall semester of the third year of enrollment at USC. The application for admission to a progressive master's program must be accompanied by a departmentally approved course plan proposal and two letters of recommendation. All application materials can be obtained from the Viterbi Admission and Student Affairs Office (RTH 110, viterbi.usc.edu/pdp).

Progressive degree program students must fulfill all the requirements for both the bachelor's degree and the master's degree. The total number of units for the master's degree, however, may be reduced by a maximum of one-third. A minimum of two-thirds of the units required for the master's degree must be at or above the 500 level, excluding any 590 courses. Students will be subject to undergraduate academic progress standards and policies while in undergraduate status and master's academic progress standards and policies while in graduate status. The degrees may be awarded separately, but the master's degree will not be awarded before the undergraduate degree. The time limit for completing a progressive degree program is 12 semesters. For more information, refer to page 87xx.

General Requirements for the Master of Science Residence Requirements

The typical time required for earning a Master of Science degree is one and one-half academic years. Students entering the Viterbi School of Engineering with course or credit deficiencies require a correspondingly longer period. A candidate must complete the last four semester units of course work at USC. Up to four transferred units will be accepted from another engineering school upon verification by Degree Progress and with the approval of the major department.

Prerequisites

Prerequisite is a bachelor's degree in engineering, allied fields or science. If the graduate field is different from the field of the bachelor's degree, there may be undergraduate deficiencies assigned by the major department, and these must be made up by taking and passing either the assigned courses or the final examination in these courses before proceeding with the graduate courses.

Deficiency Courses

New students may be required to demonstrate satisfactory preparation for the graduate program with previously completed course work. In cases where preparation is not demonstrated, up to 9 units of deficiency course work may be required in addition to the normal degree requirements.

Credit for required deficiency courses may not be applied toward a graduate degree. A deficiency course within the same discipline taken after the higher level course has been passed will not be available for unit or grade point credit.

Placement Examinations

Enrollment in certain 500- and 600-level courses in the disciplines of computer engineering and electrical engineering will require a student to either take and pass the corresponding 400-level prerequisite at USC, or pass a placement exam in the corresponding course.

Not all 400-level prerequisite courses taken instead of a placement exam are available for degree credit. No unit or grade point credit is given for placement exams. Please consult with an academic adviser or refer to the department Website at ee.usc.edu for information on specific courses and placement exam details.

Grade Point Average Requirements

A grade point average (GPA) of 3.0 ($A = 4.0$) is required for the master's degree in all engineering programs. The minimum GPA must be earned on all course work applied toward the master's degree and on all 400-level and above course work attempted at USC beyond the bachelor's degree. A minimum grade of C (2.0) is required in a course to receive graduate credit. Work graded C- or below is not acceptable for subject or unit credit toward any graduate degree. Transfer units count as credit (CR) toward the master's degree and are not computed in the grade point average.

Course Selection

There are two program options for the master's degree, one with a thesis and the other without. Courses are selected to fit the special needs of individual students, must form an integrated program leading to a definite objective and must be approved in advance by the department. Only courses numbered 400 and above may be applied for degree credit.

Program without Thesis

The minimum requirement is 27 units; 18 of these units must be at the 500 level and at least 18 units must be in the major department and closely related departments. Specific requirements are listed under each department.

Program with Thesis

The minimum requirement is 27 units; four of these units are to be thesis. At least 16 units, not including thesis, must be at the 500 level or higher, and at least 18 units must be in the major department. A total of not less than four nor more than eight units of 590 Directed Research and 594ab Master's Thesis must be included in the program. The minimum thesis requirement in 594a is two units; in 594b, two units.

Master's Thesis

The thesis, when it is required, is regarded as an important part of the work of the candidate for a master's degree. It is not intended to be a piece of highly recon-dite research, but it must be a serious, considerable and publishable piece of work demonstrating the writer's power of original thought, thorough grasp of the subject matter and ability to present material in a scholarly manner and style.

The thesis presents the results of an investigation of an approved subject in the major department. It is supervised throughout by a thesis committee, appointed by the chair of the student's major department. The

committee is usually composed of two members of the major department and one other member of the faculty.

The student will register in courses 594a and b respectively during the final two semesters of the master's program as determined by discussion with an adviser. (Concurrent registration for 594a and b during the same semester is permitted when a student's progress makes completion of all requirements likely within one semester.) If the thesis has not been completed within these two semesters, the candidate must register for 594z each semester until the thesis has been accepted but no additional unit credit will be earned.

A student readmitted to candidacy by petition to the graduate study committee must reregister for 594a and 594b. Final acceptance of the thesis is based upon the recommendation of all members of the thesis committee. For requirements concerning format of master's thesis see the Graduate School section of this catalogue.

Candidates who find it necessary to be excused from registration in 594a or 594b for a semester must formally report before the beginning of the semester to the Viterbi Office of Graduate and Professional Programs that they will be inactive during that semester and request a leave of absence. During a leave of absence a candidate will not be entitled to assistance from the thesis committee or to the use of university facilities. The granting of a leave of absence does not change the candidate's responsibility for meeting the time schedule for the completion of degree requirements. Leave will be granted only under exceptional circumstances.

Progress Toward the Degree

Graduate students are expected to make regular progress toward their degrees as defined by the faculty of their respective departments and within the time limits allowed. Graduate students' progress and performance are reviewed each semester. Students making unsatisfactory progress receive a formal written warning and are placed on a semester of academic warning with specific conditions to be met for continuation in the program. Please refer to catalogue sections Academic Warning and Dismissal of Graduate Students, page 39xx; Grade Point Average Requirements, page 85xx; and the Website of the Office of Graduate and Professional Programs (GAPP) at viterbi.usc.edu/gapp.

Department Approval for Non-major Courses

Prior departmental approval is required for non-major courses to be taken and applied toward a graduate degree. Students must consult with the faculty adviser for formal written permission to take courses outside the major department for degree credit.

A copy of the faculty adviser's written approval must be kept in the department file and retained by the student until graduation.

Time Limit

It is expected that work for a Master of Science in engineering will be completed within a maximum of five calendar years. An academic department may grant an extension of up to one year at a time for a maximum of two years. Courses taken more than seven years prior to the date upon which the degree is to be awarded cannot be included for the degree.

Admission to Candidacy

Application for admission to candidacy for the Master of Science is a separate step from admission to graduate standing. The requirements for admission to candidacy are: (1) the applicant must be admitted to regular graduate standing and must have removed all undergraduate deficiencies, and (2) the applicant must submit a complete program approved by the major department showing the course work, research and thesis (if required).

Application for graduation should be made at the beginning of the semester in which the requirements for the master's degree are to be completed. Students are strongly advised to file for graduation as soon as the registration process has been completed so that their names may appear in the printed Commencement program and so that any discrepancies in their records may be resolved. Late filing may delay conferral of the degree.

Application forms for graduation with the master's degree may be obtained from the student's academic department. This application should be returned to the student's academic department. Changes in the program after admission to candidacy are made by petition to the graduate study committee.

Second Master's Degree

A graduate student who already holds a master's degree from USC may apply a limited number of previously earned units toward the second master's degree.

The maximum number of units allowed for transfer is four. In all cases, permission of the chair of the major department is required. All credit, including the units from the first master's degree, must be earned within seven calendar years.

For students who earned their first master's degree at another institution, no course work may be repeated from the first program of study and no unit credit from the first program of study may be counted toward the second master's degree.

General Requirements for the Master of Engineering Degree

The Viterbi School does not currently offer degree programs with the Master of Engineering designation.

General Requirements for the Engineer Degree

The Engineer degree is awarded under the jurisdiction of the Viterbi School of Engineering. This degree is granted upon completion of a comprehensive curriculum beyond the general course requirements for the Master of Science and after successfully passing an engineer's qualifying examination. The required curriculum is intended to give students broad preparation in two areas of engineering, together with a minimum number of units in these areas to prepare them for the interdisciplinary nature of the many complex problems they will encounter in practice today. The degree is also intended to fulfill a growing need in industry for students with comprehensive advanced engineering training, but not necessarily with the research orientation developed by the Ph.D. student.

The Engineer degree is a terminal degree. Students who complete the Engineer degree will not be considered for admission to the Ph.D. program.

The Engineer degree is offered in aerospace engineering, astronautical engineering, chemical engineering, civil engineering, electrical engineering, environmental engineering, industrial and systems engineering, mechanical engineering, petroleum engineering and materials science.

Prerequisites

There are three basic prerequisites for the Engineer Degree Program: a Master of Science degree or completion of 27 units of acceptable course work, application for admission to the Viterbi School of Engineering and acceptance to the program by the appropriate department.

Course Requirements

The Engineer degree requires a minimum of 30 units of graduate course work beyond the Master of Science degree; up to 6 units at the 400 level may be counted at the discretion of the student's qualifying exam committee if the committee finds them necessary for the student's program. The course work must form a balanced program of study leading to a definite concentration in two fields of engineering, a minimum of 12 units in one field, nine in another; nine units are elective and may be taken outside the Viterbi School of Engineering, but must be acceptable for graduate credit. The distribution of course work will be governed by the student's qualifying exam committee and should be considered in conjunction with the course work done for the Master of Science degree. A candidate for the Engineer degree may substitute a project under the supervision of a faculty member for 6 units of course work. In order to have the project credited toward the degree, the student must register in 690 Directed Research during the course of the project; total 690 Directed Research registration should be 6 units. A student wishing to work on a project must make arrangements with a member of the faculty to supervise and evaluate work, and obtain the approval of the committee chair prior to completing more than 15 units of course work. In many cases the project may be related to the candidate's work outside the university but must still be supervised by a faculty member. Distribution of the course work should take into account the nature of the project.

Grade Point Average Requirement

A minimum grade point average of 3.0 must be earned on all course work applied toward the Engineer degree. This average must also be achieved on all 400-level and above course work attempted at USC beyond the bachelor's degree. A minimum grade of C (2.0) is required in a course to receive graduate credit. Work graded C- or below is not acceptable for subject or unit credit toward any graduate degree. Transfer units count as credit (CR) toward the Engineer degree and are not computed in the grade point average.

Residence Requirements

A candidate must complete the last four units of course work at USC. At least 26 units must be taken in residency at USC. A maximum of four transfer units not counted toward a previous degree may be allowed with adviser approval.

Qualifying Exam Committee

After being granted graduate standing the student must form a qualifying exam committee. The committee is made up of three full-time faculty members who are specialists in the student's areas of concentration, with at least two from the major department. Forms for appointment of the committee are available from the student's academic department. The student is responsible for finding a faculty member from one area of concentration who will act as the chair of the qualifying exam committee. The chair will assist in selection of the other members. Advisement of the student after formation of the committee will be by the committee chair.

Qualifying Examination

The student must satisfactorily complete an engineer's qualifying examination administered by his or her qualifying exam committee. This examination will cover both areas of concentration and will consist of at least one written and one oral examination. This examination is normally taken during the last semester of course work toward the degree. Students who choose to take the examination in the semester following the completion of course requirements may do so up until the end of the third week of classes without registering. After that date they must register for GRSC 810 to maintain continuous enrollment in the program. Results of the examination are reported to the Viterbi Office of Graduate and Professional Programs and forwarded to the Office of Academic Records and Registrar.

Transfer Credits

Up to four units of graduate course work may be transferred from an accredited institution to be applied toward the Engineer degree. Transfer work must have been done after receipt of the Master of Science degree and must be approved by the qualifying exam committee.

Reserving Course Credit

A student who receives the Master of Science degree at USC may reserve a limited number of units taken prior to the receipt of the Master of Science degree for credit toward the Engineer degree. To reserve credit, the course must have been taken during the last semester as a Master of Science candidate, not used toward the Master of Science degree, be acceptable to the student's committee, and approved by petition to the graduate study committee of the Viterbi School of Engineering.

Time Limit

The student must complete all requirements within five calendar years.

Admission to Candidacy

After satisfactorily completing the qualifying examination, and no later than the beginning of the last semester of course work, the student must file for candidacy. This is a separate and distinct step which sets forth the entire academic program fulfilling the degree requirements and is used as a working basis for awarding the degree.

General Requirements for the Doctor of Philosophy

This degree is granted under the jurisdiction of the USC Graduate School. Students should also refer to the

Requirements for Graduation section and the Graduate School section of this catalogue for general regulations. All courses applied toward the degree must be courses accepted by the Graduate School.

Thirteen Doctor of Philosophy (Ph.D.) programs are offered: aerospace engineering, astronautical engineering, biomedical engineering, chemical engineering, civil engineering, computer engineering, computer science, electrical engineering, engineering (environmental engineering), industrial and systems engineering, materials science, mechanical engineering and petroleum engineering.

Deficiency Courses

New students may be required to demonstrate satisfactory preparation for the graduate program with previously completed course work. In cases where preparation is not demonstrated, up to 9 units of deficiency course work may be required in addition to the normal degree requirements.

Credit for required deficiency courses may not be applied toward a graduate degree. A deficiency course within the same discipline taken after the higher level course has been passed will not be available for unit or grade point credit.

Placement Examinations

Enrollment in certain 500- and 600-level courses in the disciplines of computer engineering and electrical engineering will require a student to either take and pass the corresponding 400-level prerequisite at USC, or pass a placement exam in the corresponding course.

Not all 400-level prerequisite courses taken instead of a placement exam are available for degree credit. No unit or grade point credit is given for placement exams. Please consult with an academic adviser or refer to the department Website at ee.usc.edu for information on specific courses and placement exam details.

Foreign Language Requirements

There is no foreign language requirement for engineering majors.

Course Requirements

Satisfactory completion of at least 60 units of approved graduate level course work with a cumulative grade point average of at least 3.0 is required of all Ph.D. students in engineering. A minimum grade of C (2.0) is required in a course to receive graduate credit. Work graded C- or below is not acceptable for subject or unit credit toward any graduate degree. Undergraduate prerequisites and graduate course work will be required in accordance with the regulations of the major department or program and the recommendations of the student's qualifying exam committee. Transfer units are subject to approval by the Office of Degree Progress (for course work taken at institutions in the U.S.) or by the Office of Graduate Admission (for course work taken at institutions outside the United States) and by the qualifying exam committee.

Screening Procedure

The original admission decision admitting a student to the Ph.D. program is based on the student's previous academic records, Graduate Record Examinations scores and other evidence of scholastic abilities

indicating promise for completing graduate studies. It is also a prerequisite that all Ph.D. students successfully complete the screening procedures designated by the department. These usually consist of a written and an oral examination administered by the faculty. Students who fail the screening procedure will be advised that they are not recommended to continue in the Ph.D. program and that any additional work may not be counted toward the degree.

Qualifying Exam Committee

The Ph.D. student's program of study is supervised by the qualifying exam committee, which is formed immediately after passing the screening examination. The committee consists of five tenure-track faculty members, four from the major department and one from outside the department. Reporting the screening procedures and forming the qualifying exam committee are accomplished by filing the appropriate forms obtainable from the Graduate School Website, usc.edu/schools/GraduateSchool.

Qualifying Examinations

The qualifying examinations are taken during the last semester of the second year of graduate study or, at the latest, in the fifth semester or equivalent. The Request to take the Qualifying Examinations must be filed in the semester prior to taking the examinations and at least 30 days before beginning the examinations. The examinations are intended to determine the extent of the student's knowledge in basic science and engineering areas as well as the ability to do original and scholarly research. The qualifying exam committee decides the nature of the qualifying examinations (both oral and written portions) according to the policies applicable in each department.

If not otherwise enrolled, a student must enroll in GRSC 800 during the semester in which the qualifying examination is to be taken. Students are strongly encouraged to take the qualifying examination during the first semester in which they are enrolled in GRSC 800, and should not enroll in more than two semesters of GRSC 800 before taking the qualifying examination.

The examinations may be scheduled at any time during the semester provided that all members of the committee are available to administer them. All portions of the examinations must be completed within 60 days. After passing the qualifying examinations the Ph.D. student is admitted to candidacy by the Dean of Graduate Studies and the dissertation committee is established. After this step students will normally engage in at least one year of full-time graduate study and research on campus.

Doctoral Dissertation

An acceptable dissertation based on original investigation and supervised directly by the dissertation committee is required. The dissertation must show mastery of a special field, capacity for independent research and a scholarly result. Candidates are expected to keep all members of the dissertation committee informed of their progress at all stages of the dissertation.

Defense of the Dissertation

After satisfactorily meeting all other requirements and after the research and writing of the dissertation are

substantially complete, the Ph.D. candidate must pass a general final oral examination devoted to the major field and to the topic of the dissertation. The examination will be conducted in such a manner as to determine to the satisfaction of the dissertation committee that the candidate has attained the stage of scholarly advancement and power of investigation demanded by the university for final recommendation to the doctorate. The faculty are invited to attend and to participate in the final oral examination. However, only the dissertation committee may vote. Unanimous approval of the committee is required for the student to upload the dissertation to the Graduate School.

Departmental Requirements

The requirements and regulations set forth in this portion of the catalogue are to be construed as the minimal requirements only as established by the Graduate School. In addition, students must meet all the requirements established by their department.

Progress Toward the Degree

Graduate students are expected to make regular progress toward their degrees as defined by the faculty of their respective departments and within the time limits allowed. Graduate students' progress and performance are reviewed each semester. Students making unsatisfactory progress receive a formal written warning and are placed on a semester of academic warning with specific conditions to be met for continuation in the program. Please refer to catalogue sections Academic Warning and Dismissal of Graduate Students, page 39xx; Grade Point Average Requirements, page 85xx; and the Website of the Office of Graduate and Professional Programs (GAPP) at viterbi.usc.edu/gapp.

Engineering

The courses listed in the following section have been designed for specific groups of students for various purposes as indicated in the course descriptions. Certain courses have restrictions related to their applicability for degree credit. Students should consult the academic adviser in the major department for further information.

Courses of Instruction

ENGINEERING (ENGR)

ENGR 100abcd Engineering Honors Colloquium (1-1-1-1) Recent developments in a highly technological society with emphasis on selected topics. Enrollment limited to members of the Viterbi School of Engineering Honors Program. Graded CR/NC.

ENGR 101 Introduction to Engineering (3, Fa) Gateway to the majors and minors in engineering. Introduction to engineering disciplines. Historical and current trends in engineering; ethical and societal factors in engineering solutions. Hands-on design experiences; field trips; USC laboratory tours.

Special Educational Opportunities

Distance Education Network (DEN@Viterbi)

Established in 1972, the USC Viterbi School of Engineering's Distance Education Network (DEN@Viterbi) is a pioneer in the distance learning arena, using cutting-edge technology to enable professional engineers to take USC engineering courses for graduate degree credit without coming to the campus. DEN@Viterbi students enrolled around the world are pursuing over 40 graduate degree programs online — more choices than at any other research university. DEN@Viterbi breaks down geographical and scheduling barriers, allowing students to take classes anytime and anywhere. Remote DEN students receive support from administrative and technical staff and enjoy access to all services the Viterbi School has to offer.

The Viterbi School has made it possible for all on-campus students enrolled in the school's graduate courses to receive free access to the archived lectures of courses offered via DEN@Viterbi. This valuable study aid enables students to review lectures throughout the semester.

For more information, visit viterbi.usc.edu/gapp.

Graduate Certificate in Engineering Technology Commercialization

The graduate certificate in engineering technology commercialization provides USC engineers with the knowledge, skill set and confidence to manage intellectual property and technology innovation and enables them to connect with colleagues in industry and venture capital to address real-world problems through technology transfer and commercialization. This certificate program provides an opportunity for graduate students

to understand the process of evaluating the feasibility of their ideas and inventions and the confidence to commercialize their ideas. It also provides an opportunity for practicing engineers to obtain an academically rigorous foundation of technology commercialization which drives their company. The program is interdisciplinary in nature, requiring courses from both the business and engineering schools and providing education in the economic, technological and management aspects of commercializing new engineering ideas.

Applicants to this program are expected to have a degree in engineering or science from an accredited institution, an undergraduate GPA of at least 3.0 on a 4.0 scale, and a score of at least 650 on the quantitative portion and 400 on the verbal portion of the GRE test.

A total of 12 units is required for the certificate.

REQUIRED CORE COURSES (6 UNITS)		UNITS
BAEP 551	Introduction to New Ventures	3
ISE 585	Strategic Management of Technology	3
ELECTIVE COURSES (6 UNITS)		UNITS
ISE 515	Engineering Project Management	3
ISE 517	Modern Enterprise Systems	3
ISE 527	Quality Management for Engineers	3
ISE 544	Management of Engineering Teams	3
ISE 555	Invention and Technology Development	3
ISE 565	Law and Finance for Engineering Innovation	3

ENGR 102 Engineering Freshman Academy (2, Fa)

Introduction to the profession of engineering. Ethical, political and societal consequences of engineering innovations and the impact of engineering on everyday life. Team project and guest lectures. Open to freshmen only. Graded CR/NC.

ENGR 150L Engineering Science and Systems: From Humans to Robots (3, Fa)

Hands-on multidisciplinary engineering course that uses robotics as a theme to cover material from all areas of engineering. Laboratory; programming; team projects; end-of-semester exhibition. Open only to freshmen. *Recommended preparation:* Basic programming experience (e.g., C, C++, C#, Java, Python).

ENGR 301 Technical Entrepreneurship (3) (Enroll in BUAD 301)

ENGR 305 Engineering Biology Matters (3, Fa) Engineering students will learn biological phenomena in the context of engineering principles and explore biological mechanisms and processes as analogies for designing engineered systems. *Recommended preparation:* CHEM 105aL, MASC 110L.

ENGR 345 Principles and Practices of Global Innovation (3, Sp) Learner-centered, cross-cultural, technology-enabled approaches to principles and industrial practices leveraging cultural diversity to inspire innovations for competitive global markets. Requires an extended semester of 22 weeks, including 2-week overseas project in early summer.

ENGR 395abcdx Cooperative Education Work Experience (1 or 2, max 5) Supervised work experience in a professional environment related to a specific degree program, academic level, and career objective. Acceptance into Cooperative Education Program required. Graded IP/CR/NC. Degree credit by departmental approval.

ENGR 400 Engineering Honors Project (1-3, max 12, FaSpSm) Supervised interdisciplinary studies and projects. Enrollment limited to members of the Viterbi School of Engineering Honors Program. Graded CR/NC.

ENGR 493x Dean's Seminar in Entrepreneurship (2, Sp) Overview of starting and developing a new business. Discussions with successful business leaders and entrepreneurs. Not available for students admitted to the Entrepreneur Program. Open only to seniors or graduate students in business or engineering. Graded CR/NC. (Duplicates credit in former BUAD 493x.)

ENGR 499 Special Topics (2-4, max 8) Current developments in the field of engineering.

ENGR 501x Engineering Writing and Communication for Master's Students (3, FaSp) Academic and discipline-specific writing skills. Emphasis on structure of discourse and writing process. Presentation and oral communication skills also addressed. Graded CR/NC. Credit Restrictions: May be taken for degree credit only toward M.S. degrees in Industrial and Systems Engineering; Engineering Management; Manufacturing Engineering and Entrepreneurship; Operations Research Engineering; and the Master of Engineering in Environmental Quality Management.

ENGR 502x Writing Skills for Engineering Ph.D. Students (3, FaSp) Writing of engineering curriculum- and research-related projects for Ph.D. students. Focus is on conference papers, dissertations and proposals, journal articles, and other forms. Graded CR/NC. Not available for degree credit for the master's degree.

ENGR 503x Oral Communication Skills for Engineering Ph.D. Students (3, FaSp) Academic and professional presentation skills for Ph.D. students. Preparation for qualifying exams, conference paper presentations, and other forms of oral communication. Use of visual aids and poster displays included. Graded CR/NC. Not available for degree credit for the master's degree.

ENGR 504x Fellowship Proposal Writing for Engineering Ph.D. Students (2, FaSp) Preparation of essays and other materials for research fellowship applications. Graded CR/NC. Open only to Ph.D. engineering students. Not available for degree credit.

ENGR 509 Patent Law for Scientists and Engineers (3, Sp) Tools for engineering and science graduate students to make informed decisions about obtaining and enforcing patent protection for their future inventions: validity, infringement, unenforceability. *Recommended preparation:* EE 682 or ISE 565.

ENGR 596 Internship in Engineering (1, max 3, FaSpSm) Part-time or full-time, practical work experience in the student's field of study. The internship must be located at an off-campus facility. Students are individually supervised by faculty. May not be taken until the student has completed at least one semester of enrollment in the graduate program. Graduate standing in engineering. Graded CR/NC.

ENGR 599 Special Topics (2-4, max 9) Current developments in the field of engineering; topics to be selected each semester.

Aerospace and Mechanical Engineering

Student Services Office
Robert Glenn Rapp Engineering Research
 Room 101
 (213) 740-5353
 FAX: (213) 740-7774
 Email: ame@usc.edu

Faculty and Business Office
Olin Hall of Engineering
 Room 430
 (213) 740-8762
 FAX: (213) 740-8071
 Email: ame@usc.edu
 Chair: Geoffrey R. Spedding, Ph.D.*

Faculty

Philip and Cayley MacDonald Early Career Chair:
 Andrea Hodge, Ph.D.

Northrop Chair in Engineering: Hai Wang, Ph.D.

Gordon S. Marshall Professor of Engineering Technology: Roger Ghanem, Ph.D. (*Civil and Environmental Engineering*)

Zohrab A. Kaprielian Fellow in Engineering: Eva Kanso, Ph.D.

Professors: Charles Campbell, Ph.D.; Julian Domaradzki, Ph.D.**; Marijan Dravinski, Ph.D.; Fokion Egolfopoulos, Ph.D.*; Henryk Flashner, Ph.D.; Roger Ghanem, Ph.D. (*Civil and Environmental Engineering*); Yan Jin, Ph.D.; Michael E. Kassner, Ph.D. (*Materials Science*); Paul K. Newton, Ph.D.; Larry G. Redekopp, Ph.D.*; Paul Ronney, Ph.D.; Satwindar S. Sadhal, Ph.D.; Geoffrey Spedding, Ph.D.*; Firdaus E. Udwadia, Ph.D. (*Civil and Environmental Engineering, Information and Operations Management, Systems Architecting Engineering and Mathematics*); Hai Wang, Ph.D.; Bingen Yang, Ph.D.

Associate Professors: Andrea Hodge, Ph.D.; Eva Kanso, Ph.D.; Denis Phares, Ph.D.; Geoffrey R. Shiflett, Ph.D.*

Assistant Professor: Veronica Eliasson, Ph.D.

Associate Professor of Engineering Practice:
 M. Oussama Safadi, Ph.D.*

Senior Lecturer: Oliver Franke, Ph.D.

Research Associate Professor: Adam Fincham, Ph.D.

Research Associate: Anita Penkova, Ph.D.

Joint Appointments: Daniel Erwin, Ph.D.* (*Astronautics*); Mike Gruntman, Ph.D. (*Astronautics*); Petros Ioannou, Ph.D. (*Electrical Engineering — Systems*); Berok Khoshnevis, Ph.D. (*Industrial and Systems Engineering*); Joseph Kunc, Ph.D. (*Astronautics, Physics*); Stephen C-Y Lu, Ph.D. (*Industrial and Systems Engineering*); Sami F. Masri, Ph.D. (*Civil and Environmental Engineering*); E. Phillip Muntz, Ph.D.** (*Radiology*); Steven Nutt, Ph.D. (*Materials Science*); Constantinos Sioutas, Ph.D. (*Civil and Environmental Engineering*); Costas Synolakis, Ph.D. (*Civil and Environmental Engineering*); Francisco Valero-Cuevas, Ph.D. (*Biomedical Engineering*)

William E. Leonhard Professor of Engineering Emeritus:
 Fokion Egolfopoulos, Ph.D.

Emeritus Professors: Ron Blackwelder, Ph.D.*; Fred Browand, Ph.D.; Melvin Gerstein, Ph.D.; Clarke Howatt, M.S.; S. Lampert, Ph.D.; Robert Mannes, M.S., P.E.*; Donald E. Shemansky, Ph.D.

*Recipient of university-wide or school teaching award.

**Recipient of university-wide or school research award.

Mechanical Engineering Honor Society: Pi Tau Sigma
Aerospace Engineering Honor Society: Sigma Gamma Tau

Degree Requirements

Educational Program Objectives

The undergraduate programs in Aerospace and Mechanical Engineering endeavor to prepare students to achieve the following objectives:

- Graduates will be professionals working in engineering or in related areas such as computer science, business, law, medicine or public service, at both large- and small-scale businesses.
- Graduates will engage in lifelong learning, such as continuing their education through graduate school or professional development courses.
- Graduates will make use of modern and cutting-edge tools, such as advanced computer software and state-of-the-art laboratory equipment.
- Graduates will be both competent technical innovators and industrial leaders.
- Graduates will incorporate societal, ethical and environmental considerations into technical decisions.
- Graduates will effectively communicate and work with persons and teams of diverse technical and non-technical backgrounds.

Aerospace Engineering Degrees

Bachelor of Science in Aerospace Engineering

The requirement for this degree is 130 units. A cumulative grade point average of C (2.0) is required in all upper division courses applied toward the major, regardless of the department in which the courses are taken. See the common requirements for undergraduate degrees section, page 579xx.

COMPOSITION/WRITING REQUIREMENT	UNITS
WRIT 130 Analytical Writing	4
WRIT 340 Advanced Writing	3

GENERAL EDUCATION (SEE PAGE 63XX)	UNITS
General education ⁺	20

PRE-MAJOR REQUIREMENTS	UNITS
<i>Math Requirement</i>	
MATH 125 Calculus I	4
MATH 126 Calculus II	4
MATH 226 Calculus III	4
MATH 245 Mathematics of Physics and Engineering I	4

Physics Requirement

PHYS 151L* Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L Fundamentals of Physics II: Electricity and Magnetism	4
PHYS 153L Fundamentals of Physics III: Optics and Modern Physics	4

Chemistry Elective

CHEM 105aL* General Chemistry, or	
CHEM 115aL Advanced General Chemistry, or	
MASC 110L Materials Science	4

MAJOR REQUIREMENTS	UNITS
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Aerospace and Mechanical Engineering

AME 105 Introduction to Aerospace Engineering	4
AME 150L Introduction to Computational Methods	4
AME 201 Statics	3
AME 204 Strength of Materials	3
AME 231L Mechanical Behavior of Materials	3
AME 261 Basic Flight Mechanics	4
AME 301 Dynamics	3
AME 302 Dynamic Systems	3
AME 308 Computer-Aided Analysis for Aero-Mechanical Design	3
AME 309 Dynamics of Fluids	4
AME 310 Engineering Thermodynamics I	3
AME 341aLbL Mechoptronics Laboratory I and II	3-3
AME 404 Computational Solutions to Engineering Problems	3
AME 436 Energy and Propulsion	3
AME 441aL Senior Projects Laboratory	3
AME 451 Linear Control Systems I	3
AME 481 Aircraft Design	4

Astronautics

ASTE 280 Astronautics and Space Environment I	3
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MAJOR ELECTIVES	UNITS
AME core electives**	3
Technical electives***	6
Total units:	130

*Satisfies GE Category III requirement.

**Any upper division AME courses.

***Technical electives consist of (1) any upper division course in engineering except CE 404, CE 412 and ISE 440, or (2) an upper division course in chemistry, physics or mathematics and MATH 225. No more than 3 units of 490 Directed Research course work can be used to satisfy the technical elective requirement.

*The university allows engineering majors to replace the GE Category IV with a second course in Categories I, II or VI.

Minor in Engineering Technology Commercialization

See listing in the Special Educational Opportunities section, page 581xx.

Master of Science in Aerospace Engineering

In addition to the general requirements listed in this catalogue, the department has identified requirements in the following areas of specialization: aerodynamics/ fluid dynamics; aerospace controls; aerospace design; aerospace structures; computational fluid dynamics; hypersonics/kinetics of gases and plasmas; propulsion; and space science. Core requirements and elective requirements are defined for each area of specialization. Information on the current approved courses that comprise these core and elective requirements is available from the department.

Master of Science, Aerospace and Mechanical Engineering (Computational Fluid and Solid Mechanics)

The program prepares students for professional careers in engineering companies that develop products using computational tools of fluid and solid mechanics. The program also provides the necessary background for pursuing higher degrees, Engineer and Ph.D., in aerospace and mechanical engineering with specializations in computational fluid mechanics, computational solid mechanics and computational heat transfer. The degree course work provides a necessary background in basic aerospace and mechanical engineering disciplines (solid mechanics, fluid mechanics, heat transfer), engineering mathematics and numerical methods. The advanced computational technical electives provide practical examples using existing numerical programs to simulate structures, heat transfer and fluid flows as well as commercial mathematical packages for analyzing data and simulations.

Admission requirements follow the general admission rules for aerospace and mechanical engineering graduate programs. The program requires completion of a minimum of 27 units and a cumulative GPA of at least 3.0 for graduation. The program with thesis requires 28 units, four of which are thesis units.

REQUIRED CORE COURSES (21 UNITS)	UNITS
AME 404 Computational Solutions to Engineering Problems	3
AME 509 Applied Elasticity, or	
CE 507 Mechanics of Solids I	3

AME 525 Engineering Analysis	3
AME 526 Engineering Analytical Methods	3
AME 530a Dynamics of Incompressible Fluids	3
AME 535a Introduction to Computational Fluid Mechanics	3
CE 529a Finite Element Analysis	3

Select a computational technical elective from the following list or another approved by a graduate adviser: 3 units.

COMPUTATIONAL TECHNICAL ELECTIVE (3 UNITS)	UNITS
AME 415 Turbine Design and Analysis	3
AME 535b Introduction to Computational Fluid Mechanics	3
ASTE 545 Computational Techniques in Rarefied Gas Dynamics	3
CE 529b Finite Element Analysis	3
CE 551 Computer-Aided Engineering Project	3
MASC 575 Basics of Atomistic Simulation of Materials	3
MASC 576 Molecular Dynamics Simulations of Materials and Processes	3
MATH 504ab Numerical Solution of Ordinary and Partial Differential Equations	3

Select a technical elective from the following list or other electives approved by a graduate adviser: 3 units.

TECHNICAL ELECTIVES (3 UNITS)	UNITS
AME 511 Compressible Gas Dynamics	3
AME 516 Convection Processes	3
AME 590 Directed Research	1-12
AME 599 Special Topics	2-4, max 9
CE 541a Dynamics of Structures	3
CE 542 Theory of Plates	3

One core class requirement may be waived at the discretion of a graduate adviser if a student documents that he or she completed or is enrolled in an equivalent course. The waived class must be replaced by a technical elective. Credit for one course of not more than 4 units from another accredited institution may be approved by a graduate adviser. The Master's Thesis (4 units) may be substituted for a technical elective class (3 units).

Master of Science in Product Development Engineering

See the listing under Product Development Engineering, page 679xx.

Master of Science in Systems Architecting and Engineering

See the listing under Systems Architecting and Engineering, page 682xx.

Engineer in Aerospace Engineering

Requirements for the Engineer in aerospace engineering are the same as the general requirements. Three to 6 of the units required for the degree must be AME 690.

Prior approval must be obtained from the qualifying exam committee before registration in AME 690.

Doctor of Philosophy in Aerospace Engineering

The Doctor of Philosophy with a major in aerospace engineering is also offered. See general requirements for graduate degrees.

Graduate Certificate in Engineering Technology Commercialization

See listing in the Special Educational Opportunities section, page 586xx.

Mechanical Engineering Degrees

The department offers a Bachelor of Science degree in Mechanical Engineering. Additionally, petroleum engineering exists as an emphasis within the mechanical engineering program. An area of emphasis appears in parenthesis after the primary major name on the transcript.

Bachelor of Science in Mechanical Engineering

The requirement for the degree is 128 units. A cumulative grade point average of C (2.0) is required in all upper division courses applied towards the major, regardless of the department in which the courses are taken. See the common requirements for undergraduate degrees section, page 579xx.

COMPOSITION/Writing Requirement		UNITS
WRIT 130	Analytical Writing	4
WRIT 340	Advanced Writing	3
GENERAL EDUCATION (SEE PAGE 63XX)		UNITS
General education*		20

PRE-MAJOR REQUIREMENTS		UNITS
<i>Math Requirement</i>		
MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 226	Calculus III	4
MATH 245	Mathematics of Physics and Engineering I	4

Physics Requirement

PHYS 151L*	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4
PHYS 153L	Fundamentals of Physics III: Optics and Modern Physics	4

Chemistry Elective

CHEM 105aL*	General Chemistry, or	
CHEM 115aL	Advanced General Chemistry, or	
MASC 110L	Materials Science	4

MAJOR REQUIREMENTS		UNITS
<i>Aerospace and Mechanical Engineering</i>		
AME 101L	Introduction to Mechanical Engineering and Graphics	3
AME 150L	Introduction to Computational Methods	4

AME 201	Statics	3
AME 204	Strength of Materials	3
AME 301	Dynamics	3
AME 302	Dynamic Systems	3
AME 308	Computer-Aided Analysis for Aero-Mechanical Design	3
AME 309	Dynamics of Fluids	4
AME 310	Engineering Thermodynamics I	3
AME 331	Heat Transfer	3
AME 341aLbL	Mechoptronics Laboratory I and II	3-3
AME 404	Computational Solutions to Engineering Problems	3
AME 409	Senior Design Project	4
AME 441aL	Senior Projects Laboratory	3
AME 443L	Control Systems Laboratory	3
AME 451	Linear Control Systems Analysis, or	
AME 420	Engineering Vibrations	3

Materials Science

MASC 310	Materials Behavior and Processing	3
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MAJOR ELECTIVES		UNITS
AME core electives**		3
AME design elective***		3
Technical electives		6
Total units:		128

*Satisfies GE Category III requirement.

**Any upper division course in AME.

***An approved AME design course (select from AME 408, AME 430, or any special topic design course).

*The university allows engineering majors to replace the GE Category IV with a second course in Categories I, II or VI.

Bachelor of Science in Mechanical Engineering Emphasis in Petroleum Engineering

The requirement for the degree with an emphasis in petroleum engineering is 128 units. A cumulative GPA of 2.0 or higher is required for all upper division course work in engineering, science and mathematics. See the common requirements for undergraduate degrees section, page 579xx.

COMPOSITION/Writing Requirement		UNITS
WRIT 130	Analytical Writing	4
WRIT 340	Advanced Writing	3

GENERAL EDUCATION (SEE PAGE 63XX)		UNITS
General education*		20

PRE-MAJOR REQUIREMENTS		UNITS
<i>Math Requirement</i>		
MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 226	Calculus III	4
MATH 245	Mathematics of Physics and Engineering I	4

Physics Requirement

PHYS 151L*	Fundamentals of Physics I: Mechanics, Waves and Sounds	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4

PHYS 153L	Fundamentals of Physics III: Optics and Modern Physics	4
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Chemistry Elective

CHEM 105aL*	General Chemistry, or	
CHEM 115aL	Advanced General Chemistry, or	
MASC 110L	Materials Science	4

MAJOR REQUIREMENTS UNITS

<i>Aerospace and Mechanical Engineering</i>		
AME 101L	Introduction to Mechanical Engineering and Graphics	3
AME 150L	Introduction to Computational Methods in Mechanical Engineering	4
AME 201	Statics	3
AME 204	Strength of Materials	3
AME 301	Dynamics	3
AME 302	Dynamic Systems	3
AME 308	Computer-Aided Analysis for Aero-Mechanical Design	3
AME 309	Dynamics of Fluids	4
AME 310	Engineering Thermodynamics I	3
AME 331	Heat Transfer	3
AME 341aLbL	Mechoptronics Laboratory I and II	3-3
AME 404	Computational Solutions to Engineering Problems	3
AME 408	Computer-Aided Design of Mechanical Systems	3
AME 409	Senior Design Project	4
AME 441aL	Senior Projects Laboratory	3
AME 443L	Control Systems Laboratory	3
AME 451	Linear Control Systems I	3

Petroleum Engineering

PTE 461	Formation Evaluation	3
PTE 463L	Introduction to Transport Processes in Porous Media	3
PTE 464L	Petroleum Reservoir Engineering	3
PTE 465L	Drilling Technology and Subsurface Methods	3
Total units:		128

*Satisfies GE Category III requirement.

**Any upper division course in AME.

*The university allows engineering majors to replace the GE Category IV with a second course in Categories I, II or VI.

Minor in Music Recording

A minor in music recording is offered through the USC Thornton School of Music to provide undergraduate students with the background necessary to enter the field of recording engineering and to familiarize them with the design needs of modern recording equipment. The minor is recommended to mechanical engineering majors with extensive musical training who would like to combine their technical and musical abilities while learning the engineering applications of physical and mathematical principles to the art of music recording. See the listing under the USC Thornton School of Music, page 817xx.

Master of Science in Mechanical Engineering

Requirements for the Master of Science in mechanical engineering are the same as set forth in the general requirements. Six of the required units must be in AME 525 and AME 526 or courses in engineering analysis approved in advance in writing by the Department of Mechanical Engineering.

The specific sequence of courses that constitutes an acceptable program must be approved in advance.

Requirements for Graduation Without Thesis, 27 units total with 3.0 GPA: AME 525 and AME 526 or approved mathematics (6); 500 level courses in major department (12); approved 400 or 500 level courses (9).

With Thesis, 27 units total with 3.0 GPA: AME 525 and AME 526 or approved mathematics (6); 500 or 600 level courses in major department (12) not including thesis; maximum AME 594ab — thesis (4); approved 400 or 500 level units (5) (a maximum total of 8 units combining AME 590 and AME 594ab).

Recommended Programs of Study

The program of study depends upon the student's interest and background. During the first semester at USC, students must consult with a departmental faculty adviser in the area of concentration and draw up a plan of study, which must be approved by the adviser. Besides the common requirements, listed below are several areas in mechanical engineering with specific courses identified as core and core electives. Groups of courses in other combinations and from other departments within the university may be approved if a particular coordinated interest can be demonstrated. In some instances students whose background is not in mechanical engineering may be required to take additional course work.

Common Requirements

Engineering Analysis (6 units): AME 525, AME 526
Engineering electives (3–6 units): Approved 400-, 500- or 600-level courses

Engineering Design

Core courses (9 units): AME 503, AME 505, AME 509
Core electives (6 units): Two courses from AME 404, AME 527, AME 541, ASTE 520, ASTE 523, CE 529, SAE 549

Thermal and Fluid Sciences

Core courses (12 units): Four courses from one of the selected areas:

Combustion: AME 436, AME 513, AME 514, AME 530a

Fluid Dynamics: AME 457, AME 511, AME 530a, AME 535a

Heat Transfer: AME 457, AME 515, AME 516, AME 517
Core electives (6 units): Take two courses from the following list, not duplicating the above selection: AME 436, AME 457, AME 511, AME 513, AME 514, AME 515, AME 516, AME 517, AME 530a, AME 533, AME 535a, AME 535b, AME 537

Mechanics and Materials

Core courses (12 units): AME 509, AME 559, AME 560, AME 584
Core elective (3 units): One of AME 542, AME 588, CE 529a

Microelectromechanical Systems (MEMS)

Core courses (12 units): AME 455, AME 537, BME 551, EE 607
Core elective (3 units): One of AME 535a, ASTE 501a, ASTE 545

Dynamics and Control

Students interested in this area may follow the M.S., Aerospace and Mechanical Engineering (Dynamics and Control) described below.

Master of Science in Mechanical Engineering (Nuclear Power)

The program offers the degree of Master of Science in mechanical engineering with specialization in nuclear power. It is structured so that students who have all the prerequisites can complete the entire program through distance education. It is intended for students with an undergraduate degree in engineering. However, students with a physics and/or chemistry background can be accommodated with the completion of certain prerequisites.

FUNDAMENTAL		UNITS
AME 525	Engineering Analysis	3
AME 526	Engineering Analytical Methods	3
CORE		UNITS
AME 534	Nuclear Thermal-Hydraulics	3
AME 581	Introduction to Nuclear Engineering	3
AME 582	Nuclear Reactor Physics	3
AME 583	Effects of Radiation on Health	3
CE 571	Nuclear Safety and Security: Human Performance and Safety Culture	3
ELECTIVES — CHOOSE 6 UNITS		UNITS
AME 457	Engineering Fluid Dynamics	3
AME 515	Advanced Problems in Heat Conduction	3
AME 516	Convection Processes	3
AME 517	Radiation Heat Transfer	3
AME 530a	Dynamics of Incompressible Fluids	3
AME 530b	Dynamics of Incompressible Fluids	3
AME 533	Multi-Phase Flows	3
AME 535a	Introduction to Computational Fluid Mechanics	3
AME 577	Survey of Energy and Power for a Sustainable Future	3
AME 578	Modern Alternative Energy Conversion Devices	3
CHE 502	Numerical Methods for Diffusive and Convective Transport	3

EE 526	Renewable Energy in Power Systems	3
ENE 516	Hazardous Waste Management	3
Total units:		27

Master of Science in Mechanical Engineering (Energy Conversion)

See Sustainable Infrastructure Systems, page 680xx.

Master of Science in Aerospace and Mechanical Engineering (Dynamics and Control)

The Master of Science with emphasis in dynamics and control educates and trains multidisciplinary professionals in the modeling, analysis, simulation and control of complex time-evolutionary systems. It is a program of study that encompasses advanced analytical dynamics, nonlinear dynamical systems, linear and nonlinear dynamics and vibrations, and linear and nonlinear control. The program equips students to apply their knowledge to a variety of complex systems encountered in nature and society, especially those in civil, mechanical and aerospace engineering and applied mechanics.

Students will be given advisement in the first semester of their study. In addition to AME 525 and AME 526, students are required to take the following core courses: AME 521, AME 522, AME 524, AME 541, AME 552. Elective courses can be chosen in areas of specific interest to the student such as orbital dynamics, spacecraft control, aircraft dynamics and control, chaos and chaotic dynamics, random vibrations, computer control of mechanical systems and robotics. The program provides the graduate student with a broad, well-rounded, advanced education that can be applied to many specific, technologically advanced fields in which dynamics and control play a pivotal role.

Master of Science in Aerospace and Mechanical Engineering (Computational Fluid and Solid Mechanics)

See listing under Aerospace Engineering Degrees, page 589xx.

Engineer in Mechanical Engineering

Requirements for the Engineer in Mechanical Engineering degree are the same as set forth in the general requirements. Six of the units required for the degree must be AME 690. Prior approval must be obtained from the committee before registration in AME 690.

Doctor of Philosophy in Mechanical Engineering

The Doctor of Philosophy in mechanical engineering is also offered. See general requirements for graduate degrees.

Courses of Instruction**AEROSPACE AND MECHANICAL ENGINEERING (AME)**

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

AME 101L Introduction to Mechanical Engineering and Graphics (3, Fa) Gateway to the bachelor of science degree in mechanical engineering. Introduction to mechanical engineering disciplines and practice; graphical communication and layout of machine parts; introduction to computer-aided drafting and drawing.

AME 105 Introduction to Aerospace Engineering (4, Fa) Gateway to the Aerospace Engineering major. Introduction to flight vehicle performance and propulsion. Elements of the physics of gases. Laboratory: computers and graphics; model rocket and glider test flights.

AME 150L Introduction to Computational Methods (4, Sp) Computer programming; organization of problems for computational solution; introduction to software for computation and graphics; applications to engineering problems. *Corequisite:* MATH 125.

AME 201 Statics (3, FaSp) Analysis of forces acting on particles and rigid bodies in static equilibrium; equivalent systems of forces; friction; centroids and moments of inertia; introduction to energy methods. *Prerequisite:* MATH 125; *recommended preparation:* AME 101, PHYS 151L.

AME 204 Strength of Materials (3, FaSp) Stress, strain and deflection of mechanical elements due to tension, shear, bending, or torsion; combined loads; energy methods, statically indeterminate structures; strength-based design. *Prerequisite:* AME 201 or CE 205.

AME 222 Fundamentals of Audio Engineering (3, Fa) (Enroll in EE 222)

AME 231L Mechanical Behavior of Materials (3, Sp) Material properties of metals, ceramics, and composites; stress-strain relationships; microstructural characteristics; fracture, fatigue, and creep; effects of processing. *Corequisite:* AME 204.

AME 261 Basic Flight Mechanics (4, Sp) Performance of flight vehicles; maximum speed, rate-of-climb, range, and endurance; basic stability and control, weight, and balance; computer exercises. *Recommended preparation:* AME 150L.

AME 291 Undergraduate Design Projects I (1, max 4, FaSp) Analysis, design, fabrication, and evaluation of devices intended for entry in local and national design competitions. Intended for lower division students or those with little prior project experience. Graded CR/NC.

AME 301 Dynamics (3, FaSp) 2-D and 3-D kinematics and dynamics of particles and rigid bodies; systems of particles and rigid bodies; coupled rigid bodies; introduction to vibrations. *Prerequisite:* AME 201 or CE 205; *recommended preparation:* PHYS 151L.

AME 302 Dynamic Systems (3, FaSpSm) Modeling of lumped parameter elements and systems; free and forced response of first and second order systems; design oriented approach to dynamic systems. *Recommended preparation:* MATH 245; AME 309 or CE 309; AME 301 or CE 325.

AME 303 Dynamics of Machinery (3, Sp) Kinematics and dynamics of machines; balancing of rotating and reciprocating machinery; gyroscopic effects; critical speeds; energy variation in machinery; introduction to mechanism design. *Prerequisite:* AME 301 or CE 325.

AME 305 Mechanical Design (3, Fa) Design and analysis of mechanical elements including shafts, bearings, springs, screws, belts and gears; strength, fatigue and deflection considerations in machine design. *Prerequisite:* AME 204 or CE 225.

AME 308 Computer-Aided Analysis for Aero-Mechanical Design (3, FaSp) Introduction to the finite element method; practical application of computer analysis tools for structural Analysis and design. *Recommended preparation:* MATH 245.

AME 309 Dynamics of Fluids (4, FaSp) Fluid statics; conservation of mass, momentum, and energy in integral and differential form; applications. Laminar and turbulent pipe flow; compressible flow; potential flow over bodies. *Recommended preparation:* AME 310.

AME 310 Engineering Thermodynamics I (3, FaSp) Fundamental laws of thermodynamics applied to actual and perfect gases and vapors; energy concepts, processes, and applications. *Prerequisite:* MATH 226; *recommended preparation:* PHYS 151L, high-level programming language.

AME 312 Engineering Thermodynamics II (3, Sp) Application of thermodynamic principles to fluid flow, power cycles, and refrigeration. *Prerequisite:* AME 310; *recommended preparation:* high-level programming language.

AME 331 Heat Transfer (3, Sp) General principles underlying heat transfer by conduction, convection, and radiation; steady flow and transient flow. *Prerequisite:* AME 310; *corequisite:* AME 309 or CE 309.

AME 341aBL Mechatronics Laboratory I and II (3-3, FaSp) A coordinated laboratory and lecture sequence on aeromechanical instrumentation and device control stressing the symbiotic integration of mechanical, optical and electronic components. *Prerequisite:* PHYS 152L, MATH 126.

AME 353 Aerospace Structures I (3, Irregular) Shear and bending in symmetrical and unsymmetrical sections; torsion, column, and thin sheet analysis and design, including plastic failures and open section crippling.

AME 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

AME 403 Stress Analysis (3, Sp) Theories of failure, shear center, unsymmetrical bending, curved beams, torsion of non-circular sections; cylinders, rotating discs, thermal stresses, inelastic strains, energy methods. *Prerequisite:* AME 204.

AME 404 Computational Solutions to Engineering Problems (3, Fa) Mathematical aspects of the solutions to typical advanced mechanical engineering problems. Modeling, simulation, computational aspects, computer solutions, and computational tools. *Recommended preparation:* FORTRAN, MATLAB and Maple.

AME 408 Computer-Aided Design of Mechanical Systems (3, FaSp) Design of mechanical systems using advanced graphics techniques; computer-aided drafting, design optimization, elements of computer graphics, solids modeling; introduction to computer-aided manufacturing.

AME 409 Senior Design Project (4, Sp) Modeling, analysis, integration, layout and performance analysis of a mechanical system to meet specified design requirements. *Prerequisite:* senior standing.

AME 410 Engineering Design Theory and Methodology (3, Fa) Product planning and task clarification, voice of customers, quality function deployment, conceptual and embodiment design, axiomatic theory of design, product quality and manufacturability, design decision-making. Junior standing. *Recommended preparation:* AME 305.

AME 412 Molecular Theory of Gases (3, Irregular) Molecular structure; intermolecular potentials; molecular processes in gases; molecular interpretation of concepts of classical thermodynamics; radiative transport phenomena in gases. *Prerequisite:* AME 310.

AME 415 Turbine Design and Analysis (3, Fa) Physics of turbine operation; design and analysis for the development of turbine hardware for propulsion and power generation. *Recommended preparation:* familiarity with Matlab.

AME 420 Engineering Vibrations I (3, Fa) Theory of free and forced vibrations with and without damping; systems of single and multiple degrees of freedom; iteration; methods; vibration isolation; instrumentation. *Prerequisite:* MATH 245.

AME 423L Loudspeaker and Sound-System Design (3, Sp) (Enroll in EE 423L)

AME 428 Mechanics of Materials (3) (Enroll in CE 428)

AME 430 Thermal Systems Design (3, Fa) Design methodology for thermal systems; boilers, condensers, air conditioning systems, power plants and other systems with thermal energy interaction. *Recommended preparation:* AME 312 and AME 331.

AME 436 Energy and Propulsion (3, Fa) Performance and analysis of reciprocating, jet, rocket engines, and hybrid systems. Characteristics of inlets, compressors, combustors, turbines, nozzles and engine systems. Energy and environmental problems. *Prerequisite:* AME 310; AME 309 or CE 309.

AME 441aBL Senior Projects Laboratory (3-3, FaSp)

Individual engineering projects designed and constructed to model and test a physical principle or system. *Prerequisite:* AME 341bL.

AME 443 Control Systems Laboratory (3, Sp)

Vibration measurement and analysis; simulation, design, and experimental verification of mechanical control systems; identification of system parameters, implementation of controllers, verification of closed-loop performance via experimentation and stimulation. (Duplicates credit in former AME 442bL.) *Prerequisite:* AME 420 or AME 451 or EE 482.

AME 451 Linear Control Systems I (3, FaSp)

Transform methods, block diagrams; transfer functions; stability; root-locus and frequency domain analysis and design; state space and multiloop systems. *Prerequisite:* MATH 245.

AME 453 Engineering Dynamics (3, Sp)

Principles of dynamics applied to mechanical and aerospace problems. Introduction to gyroscopic motion and rigid body dynamics. *Prerequisite:* MATH 245.

AME 455 Introduction to MEMS (3, Sp)

Introduction to micro-electro-opto-mechanical systems; scaling effects on material properties, fluid flows, dynamical behavior; fabrication methods; design considerations for MEMS sensors and actuators. *Recommended preparation:* AME 301, AME 309 and AME 310.

AME 457 Engineering Fluid Dynamics (3, Fa)

Laminar and turbulent boundary layer flow with and without heat transfer; boundary layer separation, stability, transition and control; introduction to compressible fluid flow. *Prerequisite:* AME 310; AME 309 or CE 309.

AME 458 Theory of Structures II (3) (Enroll in CE 458)

AME 459 Flight Mechanics (3, Fa) Applications of basic aerodynamics to aircraft and missile performance, power and thrust, stability and control, compressibility effects. *Recommended preparation:* AME 309.

AME 460 Aerodynamic Theory (3)

Basic relations describing the inviscid flow field about bodies and wings moving at subsonic and supersonic speeds. *Prerequisite:* AME 309.

AME 461 Formation Evaluation (3) (Enroll in PTE 461)

AME 462 Economic, Risk and Formation Productivity Analysis (4) (Enroll in PTE 462)

AME 463L Introduction to Transport Processing in Porous Media (3) (Enroll in PTE 463L)

AME 464L Petroleum Reservoir Engineering (3) (Enroll in PTE 464L)

AME 465L Drilling Technology and Subsurface Methods (3) (Enroll in PTE 465L)

AME 466 High-Speed Aerodynamics (3)

Transonic and supersonic aerodynamics; application to high-speed airplanes. *Prerequisite:* AME 460.

AME 477 Solar System Exploration (3, Irregular)

Overview of current knowledge of solar system heliosphere, with emphasis on atmospheric and magnetospheric structure, including experimental methods of observation. *Prerequisite:* MATH 245.

AME 481 Aircraft Design (4, Sp)

Aircraft design and analysis, design requirements and specifications; integration of structure, propulsion, control system, and aerodynamic configuration; performance analysis and prediction. *Recommended preparation:* AME 309, AME 353.

AME 490x Directed Research (1-8, max 12)

Individual research and readings. Not available for graduate credit.

AME 491 Undergraduate Design Projects II (1, max 4, FaSp)

Analysis, design, fabrication, and evaluation of devices intended for entry in local and national design competitions. Intended for students with prior project experience. Upper division standing. Graded CR/NC.

AME 499 Special Topics (2-4, max 8)

Course content to be selected each semester from recent developments in mechanical engineering and related fields.

AME 503 Advanced Mechanical Design (3, Fa)

Specific problems and methods of analysis in mechanical systems design.

AME 504 Metallurgical Design (3, Irregular)

Relationship between metallurgical and environmental factors and the behavior of materials. *Prerequisite:* AME 303.

AME 505 Engineering Information Modeling (3, Sp)

Symbolic and object-oriented modeling, product and process modeling for design and manufacturing, information models for computer integrated and collaborative engineering, information modeling for life-cycle engineering.

AME 507 Mechanics of Solids I (3) (Enroll in CE 507)

AME 509 Applied Elasticity (3, Sp) Condensed treatment dealing with engineering applications of the principles of elasticity, using the theories of elasticity, elastic stability, and plates and shells. *Prerequisite:* AME 403.

AME 510 Introduction to Continuum Mechanics (3, Irregular)

Theories of continuous media such as linear and nonlinear theories of elasticities, theories of ideal, compressible and viscous fluids. *Prerequisite:* AME 525, AME 526.

AME 511 Compressible Gas Dynamics (3, Sp)

Thermodynamics, kinetic theory, compressible flow equations, shock and expansion waves, similarity, shock-expansion techniques and linearized flow applied to bodies, characteristics, theory of boundary layers.

AME 513 Principles of Combustion (3, Fa)

Thermochemistry, equilibrium, chemical kinetics, flame temperature, flame velocity, flame stability, diffusion flames spray combustion, detonation. Equations of motion including reaction, heat transfer, and diffusion.

AME 514 Applications of Combustion and Reacting Flows (3, Sp)

Advanced topics and modern developments in combustion and reacting flows including ignition and extinction, pollutant formation, microscale and microgravity combustion, turbulent combustion and hypersonic propulsion. *Recommended preparation:* AME 513.

AME 515 Advanced Problems in Heat Conduction (3, Sp)

Review of analytical methods in heat conduction; moving boundaries melting and freezing; sources and sinks, anisotropic and composite media; numerical methods for steady and unsteady problems. *Recommended preparation:* AME 331, AME 526.

AME 516 Convection Processes (3, Sp)

Analysis of isothermal and nonisothermal boundary layers. Exact and approximate solutions of laminar and turbulent flows. Variable-property and high-speed effects; dimensional analysis. *Prerequisite:* AME 457; *recommended preparation:* AME 526, AME 331.

AME 517 Radiation Heat Transfer (3, Fa)

Radiation properties; black body radiation; shape factors of radiation network analogy and solar radiation. *Prerequisite:* AME 331; *corequisite:* AME 525 or AME 526.

AME 520 Modeling of Bio-Systems (3, Sp)

Interacting population dynamics, Cheyne-Stokes respiration, reaction kinetics, biological switches, neuronal models, BZ reaction, phase locking, reaction diffusion, chemotaxis, biological waves, and animal coat patterns. *Recommended preparation:* MATH 245.

AME 521 Engineering Vibrations II (3, Fa)

Multi-degree of freedom systems; modal analysis. Rayleigh's quotient. Continuous systems; modal analysis. Beams, rods, membranes. Collocations, Galerkin, Rayleigh Ritz methods; finite elements. *Prerequisite:* AME 420.

AME 522 Nonlinear Dynamical Systems, Vibrations, and Chaos (3, Fa)

Lagrange equations; nonlinear maps and differential equations; fixed points; periodic motion; qualitative/quantitative and local/global analysis; higher order systems; stability; bifurcations; chaos; fractals. *Recommended preparation:* AME 420, AME 524, AME 525.

AME 523 Random Vibrations (3, Irregular)

Random processes, ergodic theory. Ito calculus. Linear systems under stationary and nonstationary excitations. Fokker-Planck equations. Failure analysis and first passage problems. *Prerequisite:* AME 420, basic probability (or MATH 407), AME 451 recommended.

AME 524 Advanced Engineering Dynamics (3, Fa)

Principle of virtual work, constraints, Lagrange's equations, Gibbs-Appell equations, Gauss's Principle, Theory of Rotations, dynamics of rigid bodies, Hamiltonian mechanics, Hamilton-Jacobi equation. *Recommended preparation:* AME 521, AME 525.

AME 525 Engineering Analysis (3, FaSpSm)

Typical engineering problems discussed on a physical basis. Vector analysis; functions of complex variables, infinite series, residues.

AME 526 Engineering Analytical Methods (3, FaSpSm)

Typical engineering problems discussed on a physical basis. Fourier series; Fourier integrals; Laplace transform; partial differential equations; Bessel function.

AME 527 Elements of Vehicle and Energy Systems Design (3, Irregular)

Design synthesis of aero/hydro/mechanical systems; techniques of design; conceptual thinking; problem definition, configurational development, analytic engineering approximation, oral briefings and group problem solving. Graduate standing.

AME 528 Elements of Composite Structure Design (3, Irregular)

Compliance, strength, endurance properties of advanced composites are developed, including semi-monocoque structure, beams, plates, panels. Applications of theory to optimal design of components and systems. Graduate standing or departmental approval required.

AME 529 Aircraft Structures Analysis (3, Sp)

The direct stiffness (finite element) method for analysis of semimonocoque structures; energy methods; elasticity, plates and shells, vibration, and stability; system identification.

AME 530ab Dynamics of Incompressible Fluids (3-3, FaSp)

A unified discussion of low-speed fluid mechanics including exact solutions; approximation techniques for low and high Reynolds numbers; inviscid flows; surface waves; dynamic stability; turbulence.

AME 532ab Flight Vehicle Stability and Control (3-3, FaSp)

Response of flight to linear, nonlinear, and randomly defined disturbances. Generation and measurement of error signals in navigational systems. Stability and control techniques. *Recommended preparation:* AME 459.

AME 533 Multi-Phase Flows (3, Sp)

Physics of the interaction between phases, empirical and analytical methods of solution to relevant technological problems. *Prerequisite:* AME 457.

AME 534 Nuclear Thermal-Hydraulics (3, Fa)

Thermal-fluid phenomena for nuclear power stations. Heat generation by nuclear reactions, conduction in fuel rods, and transport of generated heat by convection, boiling, and condensation. Open only to master's and doctoral students. *Prerequisite:* AME 457 or AME 530a; and AME 526 and AME 581; *recommended preparation:* undergraduate degree in engineering.

AME 535ab Introduction to Computational Fluid Mechanics (3-3, FaSp)

a: Convergence, consistency, stability; finite difference, finite element, and spectral methods; direct and iterative procedures for steady problems; linear diffusion and advection problems; nonlinear advection problems. *Recommended preparation:* AME 525. *b:* Generalized curvilinear coordinates; grid generation; numerical techniques for transonic and supersonic inviscid flows; boundary layer flows; reduced Navier-Stokes equations; compressible and incompressible viscous flows. *Recommended preparation:* AME 511 or AME 530a, AME 535a.

AME 537 Microfluidics (3, Fa)

Introduction to fluid dynamics in the microscale. Scaling parameters, dynamic, thermodynamic, electroosmotic and electrochemical forces. Flow in microdevices, external flow measurement and control, microvalves and micropumps. Limited to students with graduate standing. *Recommended preparation:* AME 309, MATH 445.

AME 539 Multi-body Dynamics (3, Sp)

Kinematics and kinetics of rigid body motion, quaternions; elastic vibrations of continua; geometric and material nonlinearities; Galerkin methods; meshless finite elements; complex dynamical systems; computational methods.

AME 541 Linear Control Systems II (3, Fa)

State space representation, linearization, solution of state equations; controllability and observability; state feedback, state observers; optimal control; output feedback. *Prerequisite:* AME 451.

AME 542 Theory of Plates (3)

(Enroll in CE 542)

AME 543 Stability of Structures (3)

(Enroll in CE 543)

AME 544 Computer Control of Mechanical Systems (3, Sp)

Computer control as applied to machine tools, mechanical manipulators, and other mechanical machinery; discrete time controller design; microprocessor implementation of motion and force control servos. *Prerequisite:* AME 451.

AME 545 Modeling and Control of Distributed Dynamic Systems (3, Sp)

Modeling and analysis of complex flexible mechanical systems; distributed transfer function synthesis; frequency-domain control methods; smart structure design; applications in vibration and noise control. *Prerequisite:* AME 521 and AME 541.

AME 548 Analytical Methods in Robotics (3, Irregular)

Homogeneous transformations; formal description of robot manipulators; kinematic equations and their solution; differential relationships; dynamics; control; static forces; compliance. *Prerequisite:* EE 545; EE 482 or AME 451; knowledge of linear algebra.

AME 549 Systems Architecting (3, FaSm)

(Enroll in SAE 549)

AME 550ab Seminar in Aerospace and Mechanical Engineering (1-1, FaSp)

Recent developments and research in aerospace and mechanical engineering and related fields. Oral and written reports. Graded CR/NC. Open only to AME graduate students.

AME 551 Mechanical Behavior of Engineering Materials (3)

(Enroll in MASC 551)

AME 552 Nonlinear Control Systems (3, Sp)

Phase plane, describing functions, applications to mechanical and aerospace systems. Lyapunov direct and indirect methods, applications; Popov circle criteria applications. *Prerequisite:* AME 541.

AME 553abL Digital Control Systems (3-1)

(Enroll in EE 543abL)

AME 559 Creep (3, Fa)

Behavior of engineering materials at elevated temperatures; thermal stresses; creep mechanisms; interpretation of creep data; methods of predicting long-term strains.

AME 560 Fatigue and Fracture (3, Sp)

Behavior of materials under cyclic and static fatigue; plastic instability; life-time predictions; brittle and ductile fracture; crack propagation and plastic blunting.

AME 561 Dislocation Theory and Applications (3)

(Enroll in MASC 561)

AME 567 Collaborative Engineering Principles and Practice (3, Sp)

(Enroll in ISE 567)

AME 572L Experimental Engineering Projects (3)

Experimental methods appropriate to engineering research, emphasizing interdisciplinary investigations. Individual projects.

AME 573 Aerosol Physics and Chemistry (3, Sp)

Examination of the fundamentals of aerosol formation and evolution, aerosol effects on health and climate, and the principles of aerosol measurement. Open only to master's and doctoral students.

AME 575 Advanced Engineering Analysis (3, Fa)

Solution of engineering problems by methods of calculus variations, integral equations, asymptotic expansions. *Prerequisite:* CE 525ab or AME 525 and AME 526.

AME 576 Advanced Engineering Analytical Methods (3, Sp)

Solution of engineering problems by methods of linear and nonlinear partial differential equations of first and second order; perturbations. *Prerequisite:* CE 525ab or AME 525 and AME 526.

AME 577 Survey of Energy and Power for a Sustainable Future (3, FaSp)

Power production includes conventional fossil fuels, synthetic fuels, hydroelectric, solar, wind, geothermal, biomass, and nuclear. The environmental consequences of various energy sources are discussed.

AME 578 Modern Alternative Energy Conversion Devices (3, FaSp)

Alternative energy/power conversion including fuel cells, photovoltaic, batteries, and biologically inspired energy processes; biomass conversion and utilization; Environmental implications of alternative energy processes.

AME 579 Combustion Chemistry and Physics (3, Sp) Thermodynamics of combustion processes. Reaction mechanisms of hydrocarbon combustion. Pollutant formation. Theories and application of thermochemical kinetics and reaction rate theories. Transport in reacting flows.

AME 581 Introduction to Nuclear Engineering (3, Fa) Review of basic nuclear physics, binding energy, reactor kinetics, thermal transport in reactor systems, radioactivity, shielding, reactor safety and health effects of radiation, risk assessment. Open only to graduate students. *Recommended preparation:* Undergraduate degree in engineering; AME 310, MATH 245, PHYS 153L.

AME 582 Nuclear Reactor Physics (3, Sp) Neutron-induced fission chain reactions, reactor criticality. Neutron transport and diffusion in nuclear reactors. Mathematical/computational foundation for diffusion theory and transport calculations for fission reactor design/analysis. Open only to master's and doctoral students. *Prerequisite:* AME 526 and AME 581; *recommended preparation:* undergraduate degree in engineering and PHYS 153L.

AME 583 Effects of Radiation on Health (3, Sp) Nuclear physics relevant to human health. Biological effects of radiation, quantification and measurement of different types of radiation affecting living tissue, radiation protection, nuclear accidents. Open only to master's and doctoral students. *Prerequisite:* AME 526 and AME 581; *recommended preparation:* undergraduate degree in engineering and PHYS 153L.

AME 584 Fracture Mechanics and Mechanisms (3, Fa) Failure modes, stress concentrations, complex stress analysis, linear elastic fracture mechanics, yielding fracture mechanics, experimental methods, environmental assisted fracture and fatigue. *Prerequisite:* AME 403.

AME 587 Gas-Surface Processes (3, Irregular) Examination of the basic physical chemistry of the interaction of photons and low density gas phase particles with solid-state materials. *Recommended preparation:* ASTE 535, AME 486.

AME 588 Materials Selection (3, Sp) Materials selection in relationship to design and fabrication, economic considerations, methodology of selection, performance parameter; case studies.

AME 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

AME 594abz Master's Thesis (2-2-0) Credit on acceptance of thesis. Graded IP/CR/NC.

AME 599 Special Topics (2-4, max 9) Course content will be selected each semester to reflect current trends and developments in the field of mechanical engineering.

AME 620 Aero and Hydrodynamic Wave Theory (3) Linear and nonlinear wave motion in fluids: group velocity, dispersion, wave action, wave patterns, evolution equations, solitons and solitary waves, resonance phenomena. *Recommended preparation:* AME 526 and CE 309.

AME 621 Stability of Fluids (3) Linear and nonlinear stability analysis applied to free shear layers, boundary layers and jets; Rayleigh-Benard convective instabilities and centrifugal instability of rotating flows. *Recommended preparation:* AME 530b.

AME 623 Dynamics of Stratified and Rotating Flows (3) Fluid motions in which density gradients and/or rotation are important, including internal wave motions with rotation, flow past obstacles, viscous effects, singular perturbations. *Recommended preparation:* AME 530b.

AME 624 The Fluid Dynamics of Natural Phenomena (3) Application of the basic concepts of rotating, stratified fluid motion to problems in meteorology, oceanography, geophysics and astrophysics.

AME 626 Singular Perturbation Methods (3) Asymptotic series, W.K.B. approximation, method of steepest descent, stationary phase; matched asymptotic expansions and method of multiple scales applied to ordinary and partial differential equations. *Recommended preparation:* AME 526.

AME 630 Transition to Chaos in Dynamical Systems (3) Bifurcation theory and universal routes to chaos in deterministic systems; application to maps and differential flows; characterization of strange attractors. *Recommended preparation:* AME 526.

AME 640 Advanced Theory of Elasticity (3) (Enroll in CE 640)

AME 645 Uncertainty Modeling and Stochastic Organization (3) (Enroll in CE 645)

AME 647 Multiscale Methods in Mechanics (3) (Enroll in CE 647)

AME 651 Statistical Theories of Turbulence (3) Stationary stochastic processes. Isotropic turbulence; governing equations for the velocity correlation and spectrum functions. Turbulent diffusion. Scalar fluctuations in a turbulent field. *Recommended preparation:* AME 530b.

AME 652 Turbulent Shear Flows (3) Free shear layers. Turbulent flows in pipes and channels. Turbulent boundary layers. Effects of compressibility. Sound radiation by turbulence. *Recommended preparation:* AME 530b.

AME 690 Directed Research (1-4, max 8) Laboratory study of specific problems by candidates for the degree Engineer in Mechanical Engineering. Graded CR/NC.

AME 694abz Thesis (2-2-0) Required for the degree Engineer in Aerospace Engineering. Credit on acceptance of thesis. Graded IP/CR/NC.

AME 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

AME 794abcdz Doctoral Dissertation (2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC.

Applied Mechanics

Kaprielian Hall 210
(213) 740-0603
FAX: (213) 744-1426
Email: ceedept@usc.edu
usc.edu/cee

Bachelor of Science in Applied Mechanics

The requirement for this degree is 128 units. A cumulative grade point average of C (2.0) is required in all upper division courses applied toward the major, regardless of the department in which the courses are taken. This program is administered by the staff of the Departments of Aerospace and Mechanical Engineering

and Civil Engineering. Students may register in either of these two departments and still qualify for this degree. See common requirements for undergraduate degrees section, page 569xx.

COMPOSITION/WRITING REQUIREMENTS		UNITS
WRIT 140*	Writing and Critical Reasoning	4
WRIT 340	Advanced Writing	4
		8

GENERAL EDUCATION (SEE PAGE 63XX)		UNITS
General education* +		24

PRE-MAJOR REQUIREMENTS		UNITS
<i>Math Requirement</i>		
MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 226	Calculus III	4
MATH 245	Mathematics of Physics and Engineering I	4
MATH 445	Mathematics of Physics and Engineering II	4

Physics Requirement

PHYS 151L	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152	Fundamentals of Physics II: Electricity and Magnetism	4
PHYS 153L	Fundamentals of Physics III: Optics and Modern Physics	4
Chemistry Elective		
CHEM 105aL	General Chemistry	4
		<u>36</u>

MAJOR REQUIREMENTS

MAJOR REQUIREMENTS		UNITS
<i>Aerospace and Mechanical Engineering</i>		
AME 310	Engineering Thermodynamics I	3
AME 341a	Mechoptronics Laboratory I	3
AME 441aL	Senior Projects Laboratory	3
<i>Civil Engineering</i>		
CE 205	Statics	2
CE 225	Mechanics of Deformable Bodies	3
CE 309	Fluid Mechanics	3
CE 325	Dynamics	3
<i>Electrical Engineering</i>		
EE 326L	Essentials of Electrical Engineering	4
		<u>24</u>

MAJOR ELECTIVES

MAJOR ELECTIVES	UNITS
Free electives**	4
Technical electives	28
Approved electives in computer programming	4
Total units:	<u>128</u>
*GE Category VI and WRIT 140 are taken concurrently.	
**The choice of free electives in the fourth year requires approval of the administering department.	
*The university allows engineering majors to replace the GE Category IV with a second course in Categories I, II or VI.	

Astronautical Engineering

Robert Glenn Rapp Engineering

Research Building (RRB)

(213) 821-5817

FAX: (213) 821-5819

Email: aste@usc.eduastronautics.usc.edu

Chair: Daniel A. Erwin, Ph.D.*

Faculty

IBM Chair in Engineering Management: F. Stan Settles, Ph.D.

Professors: Daniel A. Erwin, Ph.D.* (Aerospace Engineering); Mike Gruntman, Ph.D. (Aerospace Engineering, Systems Architecting Engineering); Darrell L. Judge, Ph.D. (Physics and Astronomy); Joseph A. Kunc, Ph.D. (Physics and Astronomy, Aerospace Engineering, Systems Architecting Engineering); E. Phillip Muntz, Ph.D.** (Radiology)

Associate Professor: Joseph Wang, Ph.D.

Adjunct Professors: Robert Brodsky, Ph.D.; Gerald Hintz, Ph.D.; James Wertz, Ph.D.

Adjunct Associate Professor: Michael Kezirian, Ph.D.

Research Professor: Herbert Schorr, Ph.D. (Computer Science), Vice Dean for Engineering, Executive Director Emeritus, ISI Research Professor

Research Associate Professor: Sergey Gimelshein, Ph.D.

*Recipient of university-wide or school teaching award.

**Recipient of university-wide or school research award.

Aerospace Engineering Honor Society: Sigma Gamma Tau

Degree Requirements**Educational Program Objectives**

The Bachelor of Science degree program in Astronautical Engineering has the following objectives:

- Graduates will apply technical skills in mathematics, science and engineering to solve complex problems of modern astronautical engineering practice.
- Graduates will use advanced tools and techniques of engineering, and will innovate to advance the state of the art when needed.
- Graduates will design and build complex engineering systems according to specifications and subject to technical as well as economic constraints.
- Graduates will communicate with skill as members and leaders of multidisciplinary teams.
- Graduates will make engineering decisions using high professional and ethical standards, taking into account their global, environmental and societal context.
- Graduates will learn continuously throughout their careers in order to adapt to new knowledge and discoveries and to meet future challenges.

Bachelor of Science in Astronautical Engineering

The Bachelor of Science in Astronautical Engineering prepares students for engineering careers in the space industry, for research and development in industry and government centers and laboratories, and for graduate study. The program combines a core in the fundamentals of engineering, specialized work in astronautics and space technology, and technical electives to broaden and/or deepen the course work.

The requirement for this degree is 128 units. A cumulative grade point average of C (2.0) is required in all upper division courses applied towards the major, regardless of the department in which the courses are taken. See also the common requirements for undergraduate engineering degrees section, page 569xx.

COMPOSITION/WRITING REQUIREMENTS		UNITS
WRIT 130	Analytical Writing	4
WRIT 340	Advanced Writing	4
		<u>8</u>

GENERAL EDUCATION (SEE PAGE 63XX)

GENERAL EDUCATION (SEE PAGE 63XX)	UNITS
General education* +	20

REQUIRED LOWER DIVISION COURSES

AME 150L	Introduction to Computational Methods	4
AME 201	Statics	3
AME 204	Strength of Materials	3
ASTE 101L	Introduction to Astronautics	4
ASTE 280	Astronautics and Space Environment I	3
CHEM 105aL	General Chemistry, or	
CHEM 115aL	Advanced General Chemistry, or	
MASC 110L	Materials Science	4
MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 226	Calculus III	4
MATH 245	Mathematics of Physics and Engineering I	4
PHYS 151L*	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4
PHYS 153L	Fundamentals of Physics III: Optics and Modern Physics	4

REQUIRED UPPER DIVISION COURSES

AME 301	Dynamics	3
AME 308	Computer-Aided Analysis for Aero-Mechanical Design	3
AME 341abL	Mechoptronics Laboratory I and II	3-3
AME 404	Computational Solutions to Engineering Problems	3
AME 441aL	Senior Projects Laboratory	3
AME 451	Linear Control Systems I	3
ASTE 301ab	Thermal and Statistical Systems	3-3
ASTE 330	Astronautics and Space Environment II	3
ASTE 421x	Space Mission Design	3
ASTE 470	Spacecraft Propulsion	3

ASTE 480	Spacecraft Dynamics	3
Elective	Technical elective**	12
Total units:		128

*Satisfies GE Category III requirement.

**Technical electives consist of (1) any upper division course in engineering except CE 404, CE 412 and ISE 440, or (2) an upper division course in chemistry, physics or mathematics and MATH 225. No more than 3 units of 490 course work can be used to satisfy the technical elective requirement.

*The university allows engineering majors to replace the GE Category IV with a second course in Categories I, II or VI.

Minor in Astronautical Engineering

This program is for USC students who wish to work in the space industry and government space research and development centers and who are pursuing bachelor's degrees in science, mathematics or engineering with specializations other than in astronautical engineering.

The space industry employs a wide variety of engineers (electrical, mechanical, chemical, civil, etc.); scientists (physicists, astronomers, chemists); and mathematicians. These engineers participate in development of advanced space systems but they usually lack the understanding of basic fundamentals of astronautics and space systems. The minor in astronautical engineering will help overcome this deficiency and provide unique opportunities for USC engineering, science and mathematics students, by combining their basic education in their major field with the industry specific minor in astronautical engineering.

Required course work consists of a minimum of 18 units. Including prerequisites, the minor requires 46 units. Three courses, or 9 units, at the 400 level will be counted toward the minor degree. The course work is a balanced program of study providing the basic scientific fundamentals and engineering disciplines critically important for contributing to development of complex space systems.

Prerequisite courses: MATH 125, MATH 126, MATH 226 and MATH 245; PHYS 151L, PHYS 152L and PHYS 153L.

REQUIRED COURSES		UNITS
ASTE 280	Astronautics and Space Environment I	3
ASTE 301a	Thermal and Statistical Systems I	3
ASTE 330	Astronautics and Space Environment II	3
ASTE 421x	Space Mission Design	3
ASTE 470	Spacecraft Propulsion	3
ASTE 480	Spacecraft Dynamics	3
Total minimum units:		18

Master of Science in Astronautical Engineering

This degree is in the highly dynamic and technologically advanced area of astronautics and space technology. The program is designed for those with B.S. degrees in science and engineering who wish to work in the space sector of the defense/aerospace industry, government research and development centers, and laboratories and academia. The program is available through the USC Distance Education Network (DEN).

The general portion of the Graduate Record Examinations (GRE) and two letters of recommendation are required.

Required courses: 27 units

CORE REQUIREMENT (12 UNITS)		UNITS
ASTE 470	Spacecraft Propulsion	3
ASTE 520	Spacecraft System Design	3
ASTE 535	Space Environments and Spacecraft Interactions	3
ASTE 580	Orbital Mechanics I	3

CORE ELECTIVE REQUIREMENT (6 UNITS — CHOOSE TWO COURSES)		UNITS
ASTE 501ab	Physical Gas Dynamics	3-3
ASTE 523	Design of Low Cost Space Missions	3
ASTE 527	Space Studio Architecting	3
ASTE 552	Spacecraft Thermal Control	3
ASTE 553	Systems for Remote Sensing from Space	3
ASTE 554	Spacecraft Sensors	3
ASTE 556	Spacecraft Structural Dynamics	3
ASTE 570	Liquid Rocket Propulsion	3
ASTE 572	Advanced Spacecraft Propulsion	3
ASTE 581	Orbital Mechanics II	3
ASTE 583	Space Navigation: Principles and Practice	3
ASTE 584	Spacecraft Power Systems	3
ASTE 585	Spacecraft Attitude Control	3
ASTE 586	Spacecraft Attitude Dynamics	3

TECHNICAL ELECTIVE REQUIREMENT (6 UNITS)

Two 3-unit courses. Students are advised to select these two elective courses from the list of core electives or from other courses in astronautical engineering or from other science and engineering graduate courses, as approved by the faculty adviser. No more than 3 units of directed research (ASTE 590) can be applied to the 27-unit requirement. New courses on emerging space technologies are often offered; consult the current semester's course offerings, particularly for ASTE 599 Special Topics.

ENGINEERING MATHEMATICS REQUIREMENT (CHOOSE ONE COURSE: 3 UNITS)		UNITS
AME 525	Engineering Analysis	3
AME 526	Engineering Analytical Methods	3
CE 529a	Finite Element Analysis	3
EE 517	Statistics for Engineers	3
PHYS 510	Methods of Theoretical Physics	3

At least 21 units must be at the 500 or 600 level.

Areas of Concentration:

Students choose core elective and technical elective courses that best meet their educational objectives. Students can also concentrate their studies in the desired areas by selecting corresponding core elective

courses. Presently, ASTE faculty suggest the following areas of concentration:

SPACECRAFT PROPULSION		UNITS
Choose two core electives from:		
ASTE 501ab	Physical Gas Dynamics	3-3
ASTE 570	Liquid Rocket Propulsion	3
ASTE 572	Advanced Spacecraft Propulsion	3
ASTE 584	Spacecraft Power Systems	3

SPACECRAFT DYNAMICS		UNITS
Choose two core electives from:		
ASTE 556	Spacecraft Structural Dynamics	3
ASTE 581	Orbital Mechanics II	3
ASTE 583	Space Navigation: Principles and Practice	3
ASTE 585	Spacecraft Attitude Control	3
ASTE 586	Spacecraft Attitude Dynamics	3

SPACE SYSTEMS DESIGN		UNITS
Choose two core electives from:		
ASTE 523	Design of Low Cost Space Missions	3
ASTE 527	Space Studio Architecting	3

(SAE 549 System Architecting I, 3 units, is also suggested as a technical elective for this area of concentration.)

SPACECRAFT SYSTEMS		UNITS
Choose two core electives from:		
ASTE 552	Spacecraft Thermal Control	3
ASTE 553	Systems for Remote Sensing from Space	3
ASTE 554	Spacecraft Sensors	3
ASTE 584	Spacecraft Power Systems	3

SPACE APPLICATIONS		UNITS
ASTE 527	Space Studio Architecting	3
ASTE 553	Systems for Remote Sensing from Space	3
ASTE 554	Spacecraft Sensors	3

Engineer in Astronautical Engineering

The Engineer degree in Astronautical Engineering is in the highly dynamic and technologically advanced area of space technology. The program is designed for those with Master of Science degrees in science and engineering who want to prepare for work in the space industry, government research and development centers and national laboratories. The applicant may be required to take one to two upper division undergraduate courses. The Engineer degree in Astronautical Engineering is awarded in strict conformity with the general requirements for the USC Graduate School. See the general requirements for graduate degrees on page 572xx. Each student wishing to undertake the Engineer program must first be admitted to the program and then take the screening examination. Further guidance concerning admission, screening exam and the full completion of courses, including those given outside the Department of Astronautical Engineering, can be obtained from the ASTE student adviser, program coordinators and faculty in each technical area.

Doctor of Philosophy in Astronautical Engineering

The Ph.D. in Astronautical Engineering is awarded in strict conformity with the general requirements of the USC Graduate School. See general requirements for graduate degrees on page 572xx. The degree requires a concentrated program of study, research and a dissertation. Each student wishing to undertake a doctoral program must first be admitted to the program and then take the screening examination. This examination will emphasize comprehension of fundamental material in the graduate course work. Further guidance concerning admission, the screening exam and the full completion of courses, including those given outside the Department of Astronautical Engineering, can be obtained from the ASTE student adviser and program coordinators.

Certificate in Astronautical Engineering

The Certificate in Astronautical Engineering is designed for practicing engineers and scientists who enter space-related fields and/or want to obtain training in specific space-related areas. Students enroll at USC as limited status students; they must apply and be admitted to the certificate program after completion of no more than 9 units of required course work. The required course work consists of 12 units; students will choose four 3-unit courses from the following:

REQUIRED COURSES (CHOOSE FOUR)		UNITS
ASTE 501ab	Physical Gas Dynamics	3-3
ASTE 520	Spacecraft System Design	3
ASTE 523	Design of Low Cost Space Missions	3
ASTE 527	Space Studio Architecting	3
ASTE 535	Space Environments and Spacecraft Interactions	3
ASTE 552	Spacecraft Thermal Control	3
ASTE 553	Systems for Remote Sensing from Space	3
ASTE 556	Spacecraft Structural Dynamics	3
ASTE 572	Advanced Spacecraft Propulsion	3
ASTE 580	Orbital Mechanics I	3
ASTE 581	Orbital Mechanics II	3
ASTE 583	Space Navigation: Principles and Practice	3
ASTE 584	Spacecraft Power Systems	3
ASTE 585	Spacecraft Attitude Control	3
ASTE 586	Spacecraft Attitude Dynamics	3
ASTE 599	Special Topics	3

Most classes are available through the USC Distance Education Network (DEN).

Credit for classes may be applied toward the M.S., Engineer or Ph.D. in Astronautical Engineering, should the student decide later to pursue an advanced degree. In order to be admitted to the M.S. program, the student should maintain a B average or higher in courses for the certificate and must satisfy all normal admission requirements. All courses for the certificate must be taken at USC. It is anticipated that other classes on emerging space technologies will be added to the list of the offered classes in the future.

Courses of Instruction

ASTRONAUTICS AND SPACE TECHNOLOGY (ASTE)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

ASTE 101L Introduction to Astronautics (4, Fa) Gateway to the Astronautical Engineering major. Introduction to space, space exploration and the space business. Elements of orbits, spacecraft systems, rocket propulsion, and communications. Laboratory: introduction to graphics, computation and simulation.

ASTE 280 Astronautics and Space Environment I (3) Solar system, two-body problem, orbits. Hohmann transfer, rocket equation, space environment and its effects on space systems, sun, solar wind, geomagnetic field, atmosphere, ionosphere, magnetosphere. *Prerequisite*: MATH 226 and PHYS 152L; *recommended preparation*: skill in MATLAB programming.

ASTE 291 Team Projects I (1, max 4, FaSp) Participation in ASTE undergraduate student team projects. Intended for lower-division students or those with little prior project experience.

ASTE 301ab Thermal and Statistical Systems (3-3, FaSp) Thermodynamics and statistical mechanics; kinetics of atoms, molecules, and photons; compressible fluid dynamics. (Duplicates credit in former AME 311ab.) *Prerequisite*: MATH 245, PHYS 153L.

ASTE 330 Astronautics and Space Environment II (3, Fa) Basics of spacecraft dynamics, Euler's equation, introduction to space plasma physics, spacecraft in plasma, radiation effects on space systems, space instrumentation: detectors, analyzers, spectrometers. (Duplicates credit in former AME 382.) *Prerequisite*: ASTE 280, PHYS 153L.

ASTE 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

ASTE 421x Space Mission Design (3, Sp) Space systems engineering process: requirements definition; trade studies; system integration; technical reviews; cost and schedule development; case studies; ethics. Capstone design experience. Open only to seniors. Not for graduate credit. *Prerequisite*: ASTE 330.

ASTE 445 Molecular Gas Dynamics (3) Physical description of kinetic nature of gas flows; distribution function; introduction to the Boltzmann equation; free-molecule flow; surface and molecular reflection properties; Monte Carlo flow calculations. (Duplicates credit in former AME 485.) *Recommended preparation*: AME 309 or ASTE 301b.

ASTE 470 Spacecraft Propulsion (3) Introduction to rocket engineering. Space missions and thrust requirements. Compressible gas dynamics. Propellant chemistry and thermodynamics. Liquid- and solid-fueled rockets. Nuclear and electric propulsion. (Duplicates credit in former AME 473.) *Prerequisite*: senior or graduate standing.

ASTE 480 Spacecraft Dynamics (3) Two-body motion, rigid-body motion, attitude dynamics and maneuvers, spacecraft stabilization: gravity gradient, reaction wheels, magnetic torques, thruster attitude control. (Duplicates credit in former AME 483.) *Prerequisite*: senior standing.

ASTE 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

ASTE 491 Team Projects II (1, max 4, FaSp) Participation in ASTE undergraduate student team projects. Intended for students with prior project experience.

ASTE 499 Special Topics (2-4, max 8) Course content to be selected each semester from current developments in astronautics, space technology, and related fields.

ASTE 501ab Physical Gas Dynamics (3-3, FaSp) *a*: Molecular structure; radiative processes; microscopic description of gas phenomena; translational, rotational, vibrational, and electronic freedom degrees; particle energy distributions; microscopic representation of thermodynamic functions. *Prerequisite*: graduate standing or departmental approval. *b*: Kinetic concepts in gas physics; thermal non-equilibrium; intermolecular potentials; transport of radiation and particles in high-temperature gas; dissociation and ionization equilibrium; energy relaxation. (Duplicates credit in former AME 520ab.) *Prerequisite*: ASTE 501a.

ASTE 520 Spacecraft System Design (3) System components; vehicle structure, propulsion systems, flight dynamics, thermal control, power systems, telecommunication. Interfaces and tradeoffs between these components. Testing, system reliability, and integration. (Duplicates credit in former AME 501.)

ASTE 523 Design of Low Cost Space Missions (3, Sp) Reviews all aspects of space mission design for practical approaches to reducing cost. Examines "LightSat" mission experience and potential applicability to large-scale missions. (Duplicates credit in former AME 506.) Graduate standing in engineering or science. *Recommended preparation*: ASTE 520 or some experience in space engineering.

ASTE 527 Space Studio Architecting (3, Sp) Programmatic/conceptual design synthesis/choice creation methods for complex space missions. Aerospace system engineering/architecture tools to create innovative projects. Evaluated by faculty/industry/NASA experts. Graduate standing in engineering or science. (Duplicates credit in former AME 557.) *Recommended preparation*: ASTE 520 or experience in space industry.

ASTE 535 Space Environments and Spacecraft Interactions (3) Space environments and interactions with space systems. Vacuum, neutral and ionized species, plasma, radiation, micrometeoroids. Phenomena important for spacecraft operations. (Duplicates credit in former AME 585.)

ASTE 541 Partially Ionized Plasmas (3) Review of microscopic processes involving particles and radiation, and their impact on properties of high-temperature gases and plasmas in local thermal equilibrium and non-equilibrium. (Duplicates credit in former AME 586.)

ASTE 545 Computational Techniques in Rarefied Gas Dynamics (3, Irregular) Particle-based computational simulation methods for rarefied, high-speed flows. Molecular collision kinetics. Monte Carlo direct simulation and related techniques. (Duplicates credit in former AME 564.) *Recommended preparation:* ASTE 501a and skill in FORTRAN programming.

ASTE 552 Spacecraft Thermal Control (3, Sp) Spacecraft and orbit thermal environments; design, analysis, testing of spacecraft thermal control system and components; active and passive thermal control, spacecraft and launch vehicle interfaces. Graduate standing in engineering or science.

ASTE 553 Systems for Remote Sensing from Space (3) The operation, accuracy, resolution, figures of merit, and application of instruments which either produce images of ground scenes or probe the atmosphere as viewed primarily from space. (Duplicates credit in former AME 502.) Graduate standing in engineering or physics.

ASTE 554 Spacecraft Sensors (3, Fa) Spacecraft sensors from concept and design to building, testing, interfacing, integrating, and operations. Optical and infrared sensors, radiometers, radars, phased arrays, signal processing, noise reduction. Graduate standing in engineering or science. *Recommended preparation:* ASTE 520.

ASTE 556 Spacecraft Structural Dynamics (3) Applied analytical methods (vibrations of single and multi-degree of freedom systems, finite element modeling, spacecraft applications); requirements definition process; analytical cycles; and design verification. Graduate standing in engineering or science.

ASTE 557 Spacecraft Structural Strength and Materials (3) Spacecraft structural strength analysis and design concepts overview; spacecraft material selection; analysis of composite materials; finite element method; spacecraft configuration; structural testing; bolted joint design. Open only to master's, professional, and doctoral students.

ASTE 570 Liquid Rocket Propulsion (3, Sp) Liquid-propelled rocket propulsion systems. Capillary devices for gas-free liquid acquisition in zero gravity. Ground and in-orbit operations. Propellant life predictions and spacecraft end-of-life de-orbiting strategies. *Prerequisite:* ASTE 470.

ASTE 572 Advanced Spacecraft Propulsion (3, Sp) Nuclear, electric, sails, and far-term propulsion systems. Overviews of nozzles, heat transfer, electromagnetics, rarefied gases, and plasma physics. Analysis of electrothermal, electrostatic and electromagnetic thrusters. Graduate standing in engineering or science. (Duplicates credit in former AME 573.) *Recommended preparation:* ASTE 470.

ASTE 580 Orbital Mechanics I (3) Physical principles; two-body and central force motion; trajectory correction maneuvers; position and velocity in conic orbits; Lambert's problem; celestial mechanics; orbital perturbations. (Duplicates credit in former AME 580.)

ASTE 581 Orbital Mechanics II (3, Fa) Theory of perturbations of orbits; numerical methods in orbital mechanics; satellite dynamics; averaging methods; resonance; mission analysis. (Duplicates credit in former AME 581.) *Prerequisite:* ASTE 580.

ASTE 583 Space Navigation: Principles and Practice (3, Sp) Statistical orbit determination: (weighted) least squares, batch and sequential (Kalman) processing, illustrative examples; online ephemeris generation: potentially hazardous asteroids, comets, satellites; launch: vehicles, payloads, staging. Graduate standing in engineering or science. (Duplicates credit in former AME 558.) *Recommended preparation:* ASTE 580.

ASTE 584 Spacecraft Power Systems (3, Sp) Introduction to solar arrays, batteries, nuclear power sources, mechanical energy storage. Application theory of operation, practical considerations. Subsystem topologies and performance. Design optimization techniques. Graduate standing in engineering or science. (Duplicates credit in former AME 508.)

ASTE 585 Spacecraft Attitude Control (3, SpSm) Review of attitude dynamics, gravity gradient stabilization, attitude stabilization with a spin, attitude maneuvers, control using momentum exchange devices, momentum-biased stabilization, reaction thruster control. (Duplicates credit in former AME 582.) *Prerequisite:* AME 451 or EE 482; *recommended preparation:* a course in dynamics.

ASTE 586 Spacecraft Attitude Dynamics (3) Dynamics of systems of particles and rigid bodies; spacecraft attitude systems; attitude maneuvers (spin, precession, nutation, etc.); attitude stabilization and attitude determination; simulation methods. (Duplicates credit in former AME 583.)

ASTE 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the division. Graded CR/NC.

ASTE 594abz Master's Thesis (2-2-0, FaSpSm) Credit on acceptance of thesis. Graded IP/CR/NC.

ASTE 599 Special Topics (2-4, max 9) Course content to be selected each semester from current developments in astronautics, space technology, and related fields.

ASTE 683 Advanced Spacecraft Navigation (3) Advanced topics in spacecraft navigation: rendezvous, frozen/sun synchronous orbits, stationkeeping. Nonlinear filtering for orbit and attitude determination. Optical navigation. Mission applications. *Prerequisite:* ASTE 580 and ASTE 583; *recommended preparation:* skill in MATLAB programming.

ASTE 690 Directed Research (1-4, max 8, FaSpSm) Laboratory studies of specific problems by candidates for the degree Engineer in Astronautical Engineering. Graded CR/NC.

ASTE 694abz Thesis (2-2-0, FaSpSm) Required for the degree Engineer in Astronautical Engineering. Credit on acceptance of thesis. Graded IP/CR/NC.

ASTE 790 Research (1-12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the division. Graded CR/NC.

ASTE 794abcdz Doctoral Dissertation (2-2-2-0-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC.

Biomedical Engineering

Denny Research Building 140

(213) 740-7237

FAX: (323) 821-3897

Email: bmedept@usc.edu

bme.usc.edu

Chair: Norberto M. Grzywacz, Ph.D.

Faculty

Dwight C. and Hildagarde E. Baum Chair in Biomedical Engineering: Norberto M. Grzywacz, Ph.D.

Chonette Chair in Biomedical Technology: David Z. D'Argenio, Ph.D.

David Packard Chair in Engineering: Theodore W. Berger, Ph.D.

Cornelius J. Pings Chair in Biomedical Sciences: Mark Humayun, Ph.D. (Ophthalmology)

Provost Professor of Biological Sciences and Biomedical Engineering: Scott Fraser, Ph.D. (Biological Sciences)

Dean's Professorship in Biomedical Engineering: Kirk Shung, Ph.D.

Provost Associate Professor of Biomedical Engineering, Neurology, Biokinesiology, and Physical Therapy: Terence D. Sanger, M.D., Ph.D.

Professors: Michael O. Arbib, Ph.D. (Computer Science, Neurobiology); Theodore W. Berger, Ph.D. (Neurobiology); Roberta D. Brinton, Ph.D. (Molecular Pharmacology and Toxicology); Peter S. Conti, M.D., Ph.D. (Radiology); David Z. D'Argenio, Ph.D.*; Scott Fraser, Ph.D. (Biological Sciences); Norberto M. Grzywacz, Ph.D. (Electrical Engineering); Tzung K. Hsiai, M.D., Ph.D.; Mark S. Humayun, Ph.D. (Ophthalmology); Michael C.K. Khoo, Ph.D. (Pediatrics); Kwang Jin Kim, Ph.D. (Medicine and Physiology); Richard Leahy, Ph.D. (Electrical Engineering and Radiology); Jay Lieberman, Ph.D. (Orthopaedic Surgery); Gerald E. Loeb, M.D.; Anupam Madhukar, Ph.D. (Chemical Engineering and Materials Science, Physics); Vasilis Z. Marmarelis, Ph.D. (Electrical Engineering); Jill McNitt-Gray, Ph.D. (Exercise Science); Chrysostomos Nikias, Ph.D. (Electrical Engineering); Dennis P. O'Leary, Ph.D. (Otolaryngology, Physiology and Biophysics); K. Kirk Shung, Ph.D.; Prakash Shrivastava, Ph.D. (Radiation Oncology); Armand R. Tanguay Jr., Ph.D. (Electrical Engineering, Materials Science); Francisco Valero-Cuevas, Ph.D. (Biokinesiology); Stanley M. Yamashiro, Ph.D. (Electrical Engineering)

Associate Professors: Robert H.-P. Chou, M.D., Ph.D. (Physiology and Biophysics); Daniel P. Holschneider, M.D. (Psychiatry); Hossein Javvar, M.D., Ph.D. (Radiology); Shuliang Jiao, Ph.D. (Ophthalmology); Zhong-Lin Lu, Ph.D. (Psychology); Jill McNitt-Gray, Ph.D. (Exercise Science); Bartlett W. Mel, Ph.D.; Ellis Meng, Ph.D. (Electrical Engineering); Krishna Nayak, Ph.D. (Electrical Engineering); Alapakkam P. Sampath, Ph.D. (Physiology and Biophysics); Terence D. Sanger, M.D., Ph.D. (Neurology, Biokinesiology); Stefan Schaal, Ph.D. (Computer Science); Nicolas Schweighofer, Ph.D. (Biokinesiology); Pin Wang, Ph.D., (Chemical Engineering and Materials Science); James D. Weiland, Ph.D. (Ophthalmology); Jesse T. Yen, Ph.D.

Assistant Professors: Andrea Armani, Ph.D. (Chemical Engineering and Materials Science); Greg D. Field, Ph.D. (Cell and Neurobiology); Radha Kalluri, Ph.D. (Otolaryngology); Jason Kutch, Ph.D. (Biokinesiology); Noah Malmstadt, Ph.D. (Chemical Engineering and Materials Science); J. Andrew MacKay, Ph.D. (Pharmacology and Pharmaceutical Sciences)

Associate Professor of Engineering Practice: Jean-Michel I. Maarek, Doc.Ing.

Research Professors: Daniel L. Farkas, Ph.D. (Cedars-Sinai Medical Center); Jonathan G. Lasch, Ph.D. (AMI-USC); Alfred E. Mann, M.S. (AMI-USC); Donald

J. Marsh, M.D.; Robert V. Shannon, Ph.D. (House Ear Institute); Qifa Zhou, Ph.D.

Research Associate Professors: Qian-Jie Fu, Ph.D. (House Ear Institute); John J. Granacki, Ph.D. (Electrical Engineering-Systems/ISI); Dong Song, Ph.D.

Research Assistant Professors: Rahman Davoodi, Ph.D.; Alireza Dibazar, Ph.D.; Arkadivsz Gertych, Ph.D. (Cedars-Sinai Medical Center); Clara Lajonchere, Ph.D.; Rongsong Li, Ph.D.; Eun Jin Lee, Ph.D.

Associate Professors of Research: Stefan Bluml, Ph.D. (Radiology); Brent J. Liu, Ph.D. (Radiology); Tishya A.L. Wren, M.D., Ph.D. (Orthopaedics/Pediatrics Children's Hospital and Radiology)

Assistant Professors of Research: Stephan G. Erberich, Ph.D. (Radiology); Tracy C. Grikscheit, M.D. (Surgery and Children's Hospital); Bo Han, Ph.D. (Surgery); Natasha Leporé, Ph.D. (Radiology and Children's Hospital); Paraq Mallick, Ph.D. (Medicine); Rex A. Moats, Ph.D. (Pathology, Radiology); Greg T. Mogel, M.D. (Radiology); John C. Wood, Ph.D. (Pediatric Cardiology, Children's Hospital)

Adjunct Professor: Joseph H. Schulman, Ph.D. (Alfred E. Mann Foundation)

Adjunct Associate Professors: Samuel Landsberger, Sc.D. (Rancho Los Amigos); Shirin Towfigh, M.D. (Cedars Sinai)

Adjunct Assistant Professors: Leonid Litvak, Ph.D. (Advanced Bionics Corp.); Philip Requejo, Ph.D. (Rancho Los Amigos Medical Center and Kinesiology)

Emeritus Professors: George A. Bekey, Ph.D. (Electrical Engineering, Computer Science and Speech Science); Edward K. Blum, Ph.D. (Mathematics, Computer Science); H. K. Huang, D.Sc. (Radiology)

*Recipient of university-wide or school teaching award.

Degree Requirements

Educational Program Objectives

Graduates of our undergraduate program are expected to:

- engage in a professional career in the biomedical or other related industries, or enroll in advanced graduate studies including medical school;
- work in a technically competent manner to address challenges in engineering or their chosen professions, taking into consideration ethical and societal concerns;
- work in multidisciplinary teams and communicate effectively with other engineers and professionals;
- continue to develop their technical knowledge and professional skills, as evidenced by participation or leadership in relevant professional societies; continuing education; or attendance at relevant workshops, meetings or seminars.

Bachelor of Science in Biomedical Engineering

The Department of Biomedical Engineering offers a Bachelor of Science degree in Biomedical Engineering. Additionally, there are three possible areas of emphasis within this biomedical engineering program major. These are biochemical engineering, electrical engineering, and mechanical engineering. An area of emphasis appears in parenthesis after the primary major name on the transcript. The requirement for the degree is 128 units. A cumulative grade point average of C (2.0) is required in all upper division courses applied toward the major, regardless of the department in which the courses are taken.

See common requirements for undergraduate degrees, page 569xx.

Technical electives are to be selected from an approved list available in the department office.

COMPOSITION/WRITING REQUIREMENT		UNITS
WRIT 140*	Writing and Critical Reasoning	4
WRIT 340	Advanced Writing	3

GENERAL EDUCATION (SEE PAGE 63XX)		UNITS
General education* +		20

PRE-MAJOR REQUIREMENTS		UNITS
<i>Math Requirement</i>		
MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 226	Calculus III	4
MATH 245	Mathematics of Physics and Engineering I	4

<i>Physics Requirement</i>		
PHYS 151L**	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4

<i>Chemistry Elective</i>		
CHEM 105aL**	General Chemistry, or	
CHEM 115aL**	Advanced General Chemistry	4
CHEM 105bL	General Chemistry, or	
CHEM 115bL	Advanced General Chemistry	4

MAJOR REQUIREMENTS		UNITS
<i>Biomedical Engineering</i>		
BME 101	Introduction to Biomedical Engineering	3
BME 210	Biomedical Computer Simulation Methods	3
BME 302L	Medical Electronics	4
BME 402	Control and Communication in the Nervous System	3
BME 403	Physiological Systems	3
BME 405L	Senior Projects: Measurements and Instrumentation	4
BME 410	Introduction to Biomaterials and Tissue Engineering	3
BME 423	Statistical Methods in Biomedical Engineering	3
BME 425	Basics of Biomedical Imaging	3

<i>Biology</i>			MAJOR REQUIREMENTS		UNITS	COMPOSITION/WRITING REQUIREMENT		UNITS
BISC 120L**	General Biology: Organismal Biology and Evolution	4	<i>Biomedical Engineering</i>			WRIT 140*	Writing and Critical Reasoning	4
BISC 220L	General Biology: Cell Biology and Physiology	4	BME 101	Introduction to Biomedical Engineering	3	WRIT 340	Advanced Writing	3
BISC 320L	Molecular Biology	4	BME 210	Biomedical Computer Simulation Methods	3	GENERAL EDUCATION (SEE PAGE 63XX)		UNITS
			BME 402	Control and Communication in the Nervous System	3	General education* +		20
<i>Chemistry</i>			PRE-MAJOR REQUIREMENTS			UNITS		
CHEM 322ALbL	Organic Chemistry	4-4	BME 403	Physiological Systems	3	<i>Math Requirement</i>		
			BME 405L	Senior Projects: Measurements and Instrumentation	4	MATH 125	Calculus I	4
<i>Electrical Engineering</i>			BME 410	Introduction to Biomaterials and Tissue Engineering	3	MATH 126	Calculus II	4
EE 150L	Engineering Computational Methods	3	BME 416	Development and Regulation of Medical Products	3	MATH 226	Calculus III	4
EE 202L	Linear Circuits	4	BME 423	Statistical Methods in Biomedical Engineering	3	MATH 245	Mathematics of Physics and Engineering I	4
EE 301L	Linear Systems	4				MATH 445	Mathematics of Physics and Engineering II	4
MAJOR ELECTIVES		UNITS	<i>Physics Requirement</i>			<i>Physics Requirement</i>		
Technical electives		9				PHYS 151L**	Fundamentals of Physics I: Mechanics and Thermodynamics	4
Total units:		128	<i>Biology</i>			PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4
*WRIT 140 is taken concurrently with GE Category VI.			BISC 120L**	General Biology: Organismal Biology and Evolution	4	PHYS 153L	Fundamentals of Physics III: Optics and Modern Physics	4
**Satisfies GE Category III requirement.			BISC 220L	General Biology: Cell Biology and Physiology	4			
*The university allows engineering majors to replace the GE Category IV with a second course in Categories I, II or VI.			BISC 320L	Molecular Biology	4	<i>Chemistry Elective</i>		
			BISC 330L	Biochemistry	4	CHEM 105aL**	General Chemistry, or	
Bachelor of Science in Biomedical Engineering			<i>Chemistry</i>			CHEM 115aL**	Advanced General Chemistry	4
Emphasis in Biochemical Engineering			CHEM 322ALbL	Organic Chemistry	4-4	CHEM 105bL	General Chemistry, or	
The requirement for the degree with an emphasis in biochemical engineering is 132 units. A cumulative grade point average of C (2.0) is required in all upper division courses applied towards the major, regardless of the department in which the courses are taken. See general education and additional common requirements for undergraduate degrees, page 569xx.			<i>Chemical Engineering</i>			CHEM 115bL	Advanced General Chemistry	4
			CHE 330	Chemical Engineering Thermodynamics	3	MAJOR REQUIREMENTS		UNITS
			CHE 350	Introduction to Separation Processes	3	<i>Biomedical Engineering</i>		
			CHE 460L	Chemical Process Dynamics and Control	3	BME 101	Introduction to Biomedical Engineering	3
			CHE 489	Biochemical Engineering	3	BME 210	Biomedical Computer Simulation Methods	3
COMPOSITION/WRITING REQUIREMENT		UNITS	<i>Electrical Engineering</i>			BME 402	Control and Communication in the Nervous System	3
WRIT 140*	Writing and Critical Reasoning	4	EE 150L	Engineering Computational Methods	3	BME 403	Physiological Systems	3
WRIT 340	Advanced Writing	3	EE 202L	Linear Circuits	4	BME 405L	Senior Projects: Measurements and Instrumentation	4
GENERAL EDUCATION (SEE PAGE 63XX)		UNITS	<i>Materials Science</i>			BME 423	Statistical Methods in Biomedical Engineering	3
General education* +		20	MASC 310	Materials Behavior and Processing	3	BME 425	Basics of Biomedical Imaging	3
PRE-MAJOR REQUIREMENTS		UNITS	MAJOR ELECTIVES		UNITS	<i>Biology</i>		
<i>Math Requirement</i>			Technical elective		2	BISC 220L	General Biology: Cell Biology and Physiology	4
MATH 125	Calculus I	4	Total units:		132	BISC 320L	Molecular Biology	4
MATH 126	Calculus II	4	*GE Category VI is taken concurrently with WRIT 140.					
MATH 226	Calculus III	4	**Satisfies GE Category III requirement.			<i>Chemistry</i>		
MATH 245	Mathematics of Physics and Engineering I	4	*The university allows engineering majors to replace the GE Category IV with a second course in Categories I, II or VI.			CHEM 322aL	Organic Chemistry	4
<i>Physics Requirement</i>			Bachelor of Science in Biomedical Engineering			<i>Electrical Engineering</i>		
PHYS 151L**	Fundamentals of Physics I: Mechanics and Thermodynamics	4	Emphasis in Electrical Engineering			EE 101	Introduction to Digital Logic	3
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4	The requirement for the degree with an emphasis in electrical engineering is 133 units. A cumulative grade point average of C (2.0) is required in all upper division courses applied towards the major, regardless of the department in which the courses are taken. See common requirements for undergraduate degrees section, page 569xx.			EE 150L	Engineering Computational Methods	3
<i>Chemistry Elective</i>						EE 201L	Introduction to Digital Circuits	4
CHEM 105aL**	General Chemistry, or					EE 202L	Linear Circuits	4
CHEM 115aL**	Advanced General Chemistry	4				EE 301L	Linear Systems	4
CHEM 105bL	General Chemistry, or					EE 338	Physical Electronics	3
CHEM 115bL	Advanced General Chemistry	4				EE 348L	Electronic Circuits I	4

EE 357	Basic Organization of Computer Systems	3
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MAJOR ELECTIVES	UNITS
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Technical electives	4
Total units	133

*WRIT 140 is taken concurrently with GE Category VI.

**Satisfies GE Category III requirement.

*The university allows engineering majors to replace the GE Category IV with a second course in Categories I, II or VI.

Bachelor of Science in Biomedical Engineering Emphasis in Mechanical Engineering

The requirement for the degree with an emphasis in mechanical engineering is 132 units. A cumulative grade point average of C (2.0) is required in all upper division courses applied towards the major, regardless of the department in which the courses are taken. See common requirements for undergraduate degrees section, page 569xx.

COMPOSITION/WRITING REQUIREMENT	UNITS
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WRIT 140*	Writing and Critical Reasoning	4
WRIT 340	Advanced Writing	3

GENERAL EDUCATION (SEE PAGE 63XX)	UNITS
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General education* +	20
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PRE-MAJOR REQUIREMENTS	UNITS
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Math Requirement

MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 226	Calculus III	4
MATH 245	Mathematics of Physics and Engineering I	4

Physics Requirements

PHYS 151L**	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4
PHYS 153L	Fundamentals of Physics III: Optics and Modern Physics	4

Chemistry Elective

CHEM 105aL**	General Chemistry, or	
CHEM 115aL**	Advanced General Chemistry	4
CHEM 105bL	General Chemistry, or	
CHEM 115bL	Advanced General Chemistry	4

MAJOR REQUIREMENTS	UNITS
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Aerospace and Mechanical Engineering

AME 201	Statics	3
AME 204	Strength of Materials	3
AME 301	Dynamics	3
AME 302	Design of Dynamic Systems	3
AME 308	Computer-Aided Analysis for Aero-Mechanical Design	3
AME 309	Dynamics of Fluids	4

Biomedical Engineering

BME 101	Introduction to Biomedical Engineering	3
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BME 210	Biomedical Computer Simulation Methods	3
BME 402	Control and Communication in the Nervous System	3
BME 403	Physiological Systems	3
BME 404	Biomechanics	3
BME 405L	Senior Projects: Measurements and Instrumentation	4
BME 423	Statistical Methods in Biomedical Engineering	3

Biology

BISC 220L	General Biology: Cell Biology and Physiology	4
BISC 320L	Molecular Biology	4

Chemistry

CHEM 322aL	Organic Chemistry	4
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Electric Engineering

EE 150L	Engineering Computational Methods	3
EE 202L	Linear Circuits	4

Materials Science

MASC 310	Materials Behavior and Processing	3
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MAJOR ELECTIVES	UNITS
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Technical electives	6
Total units:	132

*WRIT 140 is taken concurrently with GE Category VI.

**Satisfies GE Category III requirement.

*The university allows engineering majors to replace the GE Category IV with a second course in Categories I, II or VI.

Minor in Craniofacial and Dental Technology

For a complete listing, see the Ostrow School of Dentistry of USC, page 529xx.

Minor in Engineering Technology Commercialization

See listing in the Special Educational Opportunities section, page 581xx.

Master of Science in Biomedical Engineering

The Master of Science in Biomedical Engineering is awarded in strict conformity with the general requirements of the Viterbi School of Engineering. At least 28 approved units must be satisfactorily completed, of which at least 19 units must be at the 500 level or above. Four of these units may be thesis BME 594abz.

The master's degree program provides students with a broad background, linking physiology with engineering science, necessary for entering interdisciplinary careers in medical technology or pursuing further graduate studies in a related field.

REQUIRED COURSES	UNITS
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BME 501	Advanced Topics in Biomedical Systems	4
BME 502	Advanced Studies of the Nervous System	4
BME 511	Physiological Control Systems	3

BME 513*	Signal and Systems Analysis	3
BME 533	Seminar in Bioengineering	1
BME 594abz	Master's Thesis (2-2-0), or Technical Elective (4)	4
Electives	Technical	9
		28

*Students who have taken an advanced undergraduate or master's level course in system and signal analysis may substitute BME 523 for BME 513 with departmental approval.

Master of Science in Biomedical Engineering (Medical Imaging and Imaging Informatics)

Completion of the Master of Science in Biomedical Engineering (Medical Imaging and Imaging Informatics) requires that at least 29 approved units must be satisfactorily completed of which at least 19 units must be at the 500 level or above.

REQUIRED COURSES	UNITS
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BME 501	Advanced Topics in Biomedical Systems	4
BME 513	Signal and Systems Analysis	3
BME 525	Advanced Biomedical Imaging	3
BME 527	Integration of Medical Imaging Systems	3
BME 528	Medical Imaging Informatics	3
BME 535	Ultrasonic Imaging	3
EE 569	Introduction to Digital Image Processing	3
Electives	Technical	7
		29

Master of Science in Medical Device and Diagnostic Engineering

This program is designed to provide the knowledge and skills needed for the development of medical devices and diagnostic techniques, including aspects of medical product regulation and product development. The course of study requires successful completion of 28 units of course work and has been designed to be completed in three semesters of full-time study. Students in the program will complete a 19-unit core as well as selecting a 6-unit specialization (or "track") and one elective from a list provided by the department.

REQUIRED COURSES	UNITS
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BME 501	Advanced Topics in Biomedical Systems, or	
BME 502	Advanced Studies of the Nervous System	4
BME 513	Signal and Systems Analysis	3
BME 650	Biomedical Measurement and Instrumentation	3
MPTX 511	Introduction to Medical Product Regulation, or	
BME 416	Development and Regulation of Medical Products	3
MPTX 515	Quality Systems and Standards, or	
ISE 527	Quality Management for Engineers	3
ISE 545	Technology Development and Implementation	3
Technical elective		3

Complete 6 units from one track from the following lists:

Regulation Track

MPTX 513	Regulation of Medical Devices and Diagnostics	3
RSCI 527	Medical Product Safety	3

Medical Technology and Device Science Track

BME 535	Ultrasonic Imaging	3
BME 551	Introduction to Bio-MEMS and Nanotechnology	3
BME 552	Neural Implant Engineering	3
BME 620L	Applied Electrophysiology	4

Product Development Track

ISE 515	Engineering Project Management	3
ISE 555	Invention and Technology Development	3
		28

Technical Elective (one course)

Applicable courses include: AME 503, BME 511, BME 535, BME 551, ISE 507, ISE 508, ISE 544, MPTX 517, RSCI 528 and courses listed in alternate tracks to that chosen. Other courses may be applicable; please see an adviser for approval.

Doctor of Philosophy in Biomedical Engineering

The objective of the Doctor of Philosophy is to produce independent investigators who can make original scholarly contributions and apply advanced engineering concepts and techniques to the understanding and solution of biomedical problems. This program is intended to prepare the student for a career in academic research and teaching, or as an independent investigator in industrial or government laboratories.

The requirements listed are special to this department and must be read in conjunction with the general requirements of the Graduate School.

This program is designed to be normally completed in four years of full-time work beyond the Bachelor of Science degree (including summers). The first two years are devoted primarily to formal course work and the last two to research. In view of the flexible program, each student is assigned an adviser who will guide him or her in the selection of courses. By the end of the third semester of graduate study the student must have completed the Ph.D. screening examination. Subsequently, he or she is required to make a tentative major field selection (e.g., biomedical imaging, signal processing, neural engineering) and pass a qualifying examination. In accordance with the requirements of the Graduate School, at least 60 units of credit beyond the Bachelor of Science degree are required, with a minimum grade point average of 3.0. Students are required to take BME 533, the graduate biomedical engineering seminar course, for three semesters during their studies.

Requirements for Admission

Bachelor of Science degree in engineering or a natural science, and satisfactory scores on the Graduate Record Examinations. Undergraduate work should include a basic course in biology, physics, organic chemistry, biochemistry, differential equations and digital computation. Students lacking any of these will be required

to make up the deficiency during the first two years of graduate work.

Students who have completed all requirements for the Master of Science degree offered in this department may apply for admission to the Ph.D. program. In this case, all courses taken in the M.S. program may be applied toward the requirements of the doctoral degree.

Screening Examination Process

By the end of the third semester of graduate study, all students must have completed the screening examination process to determine whether or not they will be allowed to continue in the Doctor of Philosophy program. Those who fail will be dropped from the program, although they may be permitted to complete the additional requirements necessary to obtain the Master of Science degree.

Qualifying Exam Committee

During the third semester, the student must make a tentative major field selection as described above and form a qualifying exam committee. The latter administers the qualifying examination.

Qualifying Examination

The qualifying examination will normally be taken during the fourth semester of full-time academic study. The examination requires the preparation of a comprehensive written research proposal that presents a research question, critically reviews the pertinent literature and outlines the proposed experimental, analytical and computational procedures required to answer the question. The proposal must be defended in an oral examination.

Graduate Certificate in Engineering Technology Commercialization

See listing in the Special Educational Opportunities section, page 586xx.

Graduate Certificate in Health, Technology and Engineering (HTE@USC)

Academic Director: Terry Sanger, M.D., Ph.D., *Provost Associate Professor of Biomedical Engineering, Neurology, Biokinesiology, and Physical Therapy*

Administrative Director: George Tolomiczenko, Ph.D., *Assistant Professor, Neurology*

This program offers current second-year USC Ph.D. engineering students and first-year M.D. students an opportunity to learn about and gain experience in medical device and process innovation. Through project-based and interdisciplinary collaboration, students will augment their current programs with a set of courses and lab experiences linking medical and engineering research groups. By applying design-informed approaches toward problem identification and solution prototyping, students will be involved in all the steps of medical device or process innovation from conception to commercialization. The program aims to create interdisciplinary, boundary-spanning, inventive entrepreneurs seeking early practical experience with device and method innovation in health care. Program participants will form bonds with a group of like-minded medical students and engineers who will be

their mentors, colleagues and contacts as they advance in their careers.

The courses unique to the program include a seminar sequence (Topics in Health, Technology and Engineering), which must be taken during the first two years of involvement with the HTE@USC program, a case studies sequence taken during the second year and a research course to earn project-related credits:

COURSES		UNITS
BME 566abcd	Topics in Health, Technology and Engineering:	2-2-2-2
BME 567ab	Case Studies in Health, Technology and Engineering	2-2
BME 790	Research	12
Other required courses that are part of the M.D. curriculum (Ph.D. students enroll in INTD course versions of the same courses open only to HTE students on CR/NC basis):		
INTD 621ab	Introduction to Clinical Medicine (ICM) for HTE	3-3
INTD 622L	Pre-clinical System Block for Health, Technology and Engineering	3-9

Candidates interested in applying should contact HTE@USC via email at hte@usc.edu.

Courses of Instruction

BIOMEDICAL ENGINEERING (BME)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

BME 101 Introduction to Biomedical Engineering

(3, Fa) Historical development and survey of major areas comprising biomedical engineering: theoretical neurobiology and systems physiology, biomedical instrumentation, artificial organ and prosthetic devices, biomedical computer applications.

BME 201 Biomedical Engineering Practice (2, Fa)

Examination of the technical and practical challenges involved in the development of medical devices, including neural implants, in industry and the clinical setting. *Recommended preparation:* BME 101.

BME 210 Biomedical Computer Simulation Methods (3, Sp)

Computational methods for simulation of circulatory, respiratory, pharmacokinetic, and neural models. Quadrature, differential equations, systems of linear equations, simulation languages, experimental statistics. *Prerequisite:* EE 150L; *corequisite:* MATH 245.

BME 302L Medical Electronics (4, Sp)

Electronic design and measurements for medical applications. Use of integrated circuits, biopotential measurements, static and dynamic calibration of physiological transducers. *Prerequisite:* EE 202L.

BME 350 Biomedical Engineering Industrial Project (3, Sp) Training in specific skills relevant to biomedical industry. Placement in summer internship following successful completion of the course. Junior standing. *Prerequisite:* BME 210.

BME 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

BME 402 Control and Communication in the Nervous System (3, Sp) An introduction to the structural and functional elements common to nervous systems, with emphasis on cellular dynamics, interneuronal communication, sensory and effector systems. *Prerequisite:* BISC 220L, BME 210, MATH 245.

BME 403 Physiological Systems (3, Fa) A thorough bioengineering treatment of the physiological properties of various mammalian organ systems: e.g., cardiovascular, respiratory, renal, and musculoskeletal. *Prerequisite:* BISC 220L, MATH 245; *corequisite:* EE 202L.

BME 404 Biomechanics (3, Fa) Mechanical properties of biological tissues and fluid transport in physiological systems: blood rheology; bioviscoelastic solids and fluids; gas flow and mixing; prosthesis design. *Prerequisite:* PHYS 151L; MATH 245; AME 201.

BME 405L Senior Projects: Measurements and Instrumentation (4, FaSp) Application of instrumentation and measurement techniques to biomedical engineering projects involving measurement, replacement or augmentation of biomedical systems. *Prerequisite:* BME 210, EE 202L.

BME 410 Introduction to Biomaterials and Tissue Engineering (3, Fa) Application of principles of physical chemistry, biochemistry, and materials engineering to biomedical problems, e.g., materials selection and design for implants and tissue replacement. *Prerequisite:* CHEM 322aL.

BME 412 Craniofacial and Dental Technology (4) (Enroll in DENT 412)

BME 414 Rehabilitation Engineering (3, Sp) An introduction to rehabilitation technology: limb and spinal orthoses; limb prostheses; functional electrical stimulation; sensory aids. *Recommended preparation:* AME 201.

BME 416 Development and Regulation of Medical Products (3, Sp) An introduction to the process of medical product development with emphasis on the regulations that govern the design, fabrication, and maintenance of medical products. Junior standing.

BME 423 Statistical Methods in Biomedical Engineering (3, Fa) Applications of parametric and non-parametric tests, analysis of variance, linear regression, time-series analysis, and autoregressive modeling, with biomedical applications to statistical analysis of biomedical data. *Prerequisite:* BME 210.

BME 425 Basics of Biomedical Imaging (3, Fa) Engineering, clinical applications and modern physics concepts underlying X-ray imaging, Computed Tomography (CT), nuclear medicine, positron emission tomography, Magnetic Resonance Imaging (MRI), ultrasound imaging. *Prerequisite:* PHYS 152L.

BME 451 Fundamentals of Biomedical Microdevices (3, Fa) Introduction to biomedical microdevices with emphasis on microtechnologies and biomedical microelectromechanical systems (bioMEMS). Principles for measurement of small-scale biological phenomena and clinical applications. *Prerequisite:* EE 202L; *recommended preparation:* basic biology and electronics.

BME 452 Introduction to Biomimetic Neural Engineering (3, Fa) Engineering principles, biology, technological challenges and state-of-the-art developments in the design of implantable biomimetic microelectronic devices that interface with the nervous system. *Prerequisite:* EE 202; *recommended preparation:* basic biology and electronics.

BME 489 Biochemical Engineering (3, Sp) (Enroll in CHE 489)

BME 490x Directed Research (1-8, max 12) Individual research and readings. Not available for graduate credit.

BME 499 Special Topics (2-4, max 8) Current trends and developments in the field of biomedical engineering.

BME 501 Advanced Topics in Biomedical Systems (4, FaSp) Advanced topics in selected biomedical systems: cardiopulmonary, neuromuscular, renal and endocrine.

BME 502 Advanced Studies of the Nervous System (4, Fa) Advanced topics on the structure and function of the nervous system examined from the viewpoint of computational systems science.

BME 504 Neuromuscular Systems (3, Fa) Introduces the fundamentals of mathematical, Newtonian, and robotic analysis applicable to multi-muscle biomechanical systems. Combines physiology with numerical simulations to understand and predict motor function. *Recommended preparation:* Matlab programming, fundamentals of mechanics, linear algebra.

BME 505aBL Laboratory Projects in Biomedical Engineering (4, FaSpSm) Integration of biomedical science, engineering principles and state-of-the-art technology for the study of selected physiological systems in the laboratory setting. Laboratory. Graded CR/NC.

BME 511 Physiological Control Systems (3, Fa) Application of control theory to physiological systems; static analysis of closed-loop systems; time-domain analysis of linear control identification methods; nonlinear control. *Recommended preparation:* BME 513.

BME 513 Signal and Systems Analysis (3, Sp) Classification; representation; statistical analysis; orthogonal expansions; least-squares estimation; harmonic analysis; Fourier, Laplace, and Z transforms; the linear system; filtering; modeling and simulation; linear control theory.

BME 520 Modeling of Bio-Systems (3, Sp) (Enroll in AME 520)

BME 523 Measurement and Processing of Biological Signals (3, Fa) Acquisition, analysis, and display of biological data using digital computers; laboratory applications of digital signal processing and real time analysis. *Prerequisite:* BME 513.

BME 525 Advanced Biomedical Imaging (3, Sp) Advanced scientific and engineering principles of biomedical imaging including magnetic resonance, X-ray computed tomography, ultrasound, and single photon and positron emission tomography. Open only to master's and doctoral students. *Prerequisite:* BME 513 or EE 483.

BME 527 Integration of Medical Imaging Systems (3, Fa) Medical imaging quality, compression, data standards, workflow analysis and protocols, broadband networks, image security, fault tolerance, picture archive communication system (PACS), image database and backup.

BME 528 Medical Imaging Informatics (3, Sp) Picture archive communication system (PACS) design and implementation; clinical PACS-based imaging informatics; telemedicine/teleradiology; image content indexing, image data mining; grid computing in large-scale imaging informatics; image-assisted diagnosis, surgery and therapy. *Prerequisite:* BME 425 or BME 525, BME 527.

BME 533 Seminar in Bioengineering (1, max 3, FaSp) Graded CR/NC.

BME 535 Ultrasonic Imaging (3, Sp) All aspects of ultrasonic imaging including ultrasound and tissue interaction, ultrasonic transducers, instrumentation, imaging methods, clinical applications, bioeffects, safety, and recent developments in the field.

BME 536 Ultrasonic Transducers (3, Fa) Background and foundation covering the design, fabrication and testing of ultrasonic transducers and arrays. Design approaches, modeling tools will be discussed. Design project assigned.

BME 551 Introduction to Bio-MEMS and Nanotechnology (3, Sp) Principles and biomedical applications of micro-electromechanical systems (MEMS) and nanotechnology, including microfluidics, nanowire sensors, nanomotors, quantum dots, biofuel cells and molecular imaging. *Recommended preparation:* Basic biology and electronics.

BME 552 Neural Implant Engineering (3, Sp) Advanced studies of the basic neuroscience, engineering design requirements and technological issues associated with implantable neural prostheses, with particular emphasis on retinal and cortical function.

BME 566abcd Topics in Health, Technology and Engineering (a: 2, Fa; b: 2, Sp; c: 2, Fa; d: 2, Sp) Interdisciplinary approach to impart the skills, knowledge and familiarity with stages of collaborative projects related to medical device and methods innovation in health care settings. Open only to health, technology and engineering majors. *c: Concurrent enrollment:* BME 567a. *d: Concurrent enrollment:* BME 567b.

BME 567ab Case Studies in Health, Technology and Engineering (a: 2, Fa; b: 2, Sp) Learning from cases illustrating paths from health care problems to solutions. Faculty, students and invited guests will provide examples of both successful and unsuccessful innovation attempts. Open only to health, technology and engineering majors. *a: Concurrent enrollment:* BME 566c. *b: Concurrent enrollment:* BME 566d.

BME 575L Computational Neuroengineering (3, Sp) Introduction to computational modeling in neuroengineering, anchored in examples of brain function. Topics include transduction, synapses, spiking, networks, normalization, learning, Bayesian models, and Kalman filtering. *Prerequisite:* BME 502.

BME 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

BME 594abz Master's Thesis (2-2-0) Credit on acceptance of thesis. Graded IP/CR/NC.

BME 599 Special Topics (2-4, max 9) Current trends and developments in the field of biomedical engineering.

BME 620L Applied Electrophysiology (4, Fa) The theoretical basis and applied design principles for medical devices and instrumentation that interact with electrically excitable tissues of the body. *Prerequisite:* BME 502.

BME 650 Biomedical Measurement and Instrumentation (3, Sp) Design of measurement systems and biomedical instrumentation; architecture of electronic instruments used to measure physiological parameters, analysis of major process functions integrated in these instruments. Open to M.S., Medical Device and Diagnostic Engineering and biomedical engineering Ph.D. students only. *Recommended preparation:* BME 513.

BME 670 Early Visual Processing (4, Fa) Interdisciplinary topics in biological and artificial low-level visual processing. Retina, lateral geniculate nucleus; computer vision; neurophysiology, retinal prosthesis; molecular biology, phototransduction; edge detection; movement. Open to graduate students only. *Prerequisite:* NEUR 524 or BME 502 or CSCI 574.

BME 671 Late Visual Processing (4, Sp) Interdisciplinary topics in biological and artificial high-level visual processing. Visual cortex; computer vision; neurophysiology; psychophysics; MRI; computational models; orientation selectivity; stereopsis; motion; contours; object recognition. Open to graduate students only. *Prerequisite:* NEUR 524 or BME 502 or CSCI 574.

BME 680 Modeling and Simulation of Physiological Systems (3, Irregular) Mathematical theories and computation techniques for modeling physiological systems, with emphasis on cardiorespiratory, metabolic-endocrine, and neuronal functions.

BME 790 Research (1-12) Research applicable to the doctorate. Graded CR/NC.

BME 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC.

Chemical Engineering — Mork Family Department of Chemical Engineering and Materials Science

HEDCO Building 216
(213) 740-2225
FAX: (213) 740-8053
Email: chemsche@vsoe.usc.edu
chems.usc.edu
Chair: Steven R. Nutt, Ph.D.

Faculty

Zohrab A. Kaprielian Dean's Chair in Engineering and Chester F. Dolley Chair in Petroleum Engineering: Yannis C. Yortsos, Ph.D.

Fluor Early Career Chair in Engineering: Andrea M. Armani, Ph.D. (Electrical Engineering, Chemistry, Biomedical Engineering)

M.C. Gill Chair in Composite Materials: Steven R. Nutt, Ph.D. (Aerospace and Mechanical Engineering)

Omar B. Milligan Chair in Petroleum Engineering: Iraj Ershaghi, Ph.D., P.E.

N.I.O.C. Chair in Petroleum Engineering: Muhammad Sahimi, Ph.D.

Robert E. Vivian Chair in Energy Resources: Theodore T. Tsotsis, Ph.D.

Fluor Professor in Process Engineering: S. Joe Qin, Ph.D. (Electrical Engineering and Industrial and Systems Engineering)

Kenneth T. Norris Professor of Engineering: Anupam Madhukar, Ph.D. (Physics and Biomedical Engineering)

Judge Widney Professor of Chemical Engineering and Chemistry: Ray R. Irani, Ph.D. (Chemistry)

Zohrab A. Kaprielian Fellow in Engineering: Pin Wang, Ph.D.

Professors: Edward Crandall, Ph.D., M.D. (Medicine); P. Daniel Dapkus, Ph.D. (Electrical Engineering); Martin Gundersen, Ph.D. (Electrical Engineering); Rajiv K. Kalia, Ph.D. (Physics and Computer Science); Michael Kassner, Ph.D. (Aerospace and Mechanical Engineering); Terence G. Langdon, Ph.D., D.Sc. (Aerospace and Mechanical Engineering and Earth Sciences); Florian Mansfeld, Ph.D.; Aiichiro Nakano, Ph.D. (Computer Science, Physics and Biomedical Engineering); George Olah, Ph.D. (Chemistry); Richard Roberts, Ph.D. (Chemistry); Richard Stegemeier, M.S. Eng.; Armand R. Tanguay Jr., Ph.D. (Electrical and Biomedical Engineering); Mark E. Thompson, Ph.D. (Chemistry); Priya Vashishta, Ph.D. (Physics, Computer Science and Biomedical Engineering); Chongwu Zhou, Ph.D. (Electrical Engineering)

Associate Professors: Wenji Victor Chang, Ph.D.; Edward Goo, Ph.D.; Kristian Jessen, Ph.D.; C. Ted Lee Jr., Ph.D.*; Katherine S. Shing, Ph.D.*; Pin Wang, Ph.D.

Assistant Professors: Malancha Gupta, Ph.D.; Andrea Maria Hodge, Ph.D. (Aerospace and Mechanical Engineering); Behnam Jafarpour, Ph.D.; Noah Malmstadt, Ph.D.; Jongseung Yoon, Ph.D.

Research Professors: Fred Aminzadeh, Ph.D.; Don Zhang, Ph.D. (Civil and Environmental)

Emeritus Professors: Elmer L. Dougherty, Ph.D.; Murray Gershenzon, Ph.D. (Electrical Engineering); Ronald Salovey, Ph.D.*; Peter Will, Ph.D. (Astronautical Engineering and Industrial and Systems Engineering)

*Recipient of university-wide or school teaching award.

Chemical Engineering Honor Society: Omega Chi Epsilon

Degree Requirements

Educational Program Objectives

Chemical engineering is the only engineering discipline that makes extensive use of chemical transformations (reactions) in addition to physical transformations (refining, molding or machining) to achieve added value. Chemical engineers are employed in virtually all

manufacturing industries, from the basic chemical, biochemical, materials, energy, food, pharmaceutical and microelectronics industries to the myriad consumer product industries. Our various curricula are designed to produce graduates who are broadly educated as well as highly adaptable.

Graduates of the Bachelor of Science in Chemical Engineering programs are prepared to achieve any of the following accomplishments:

- To obtain employment and succeed in organizations where physical, chemical or biochemical transformations are utilized to produce products and services that benefit society.
- To pursue graduate or professional education in a variety of related fields.
- To engage in continuous personal and professional development through lifelong learning.
- To assume leadership roles in their employment organization or community.

Bachelor of Science in Chemical Engineering Degree

The Mork Family Department of Chemical Engineering offers a Bachelor of Science degree in Chemical Engineering. Additionally, there are five possible areas of emphasis within this chemical engineering program major. These are: biochemical engineering (133 units); environmental engineering (132 units); nanotechnology (128 units); petroleum engineering (133 units); and polymer/materials science (133 units). An area of emphasis appears in parentheses after the primary major name on the transcript.

Sample student schedules are located on the department Web page (chems.usc.edu).

Common Requirements for the B.S. Degree and All Areas of Emphasis (108 units)

See also common requirements for undergraduate degrees section, page 569xx.

COMPOSITION/WRITING COURSES		UNITS
WRIT 140*	Writing and Critical Reasoning	4
WRIT 340	Advanced Writing	3

GENERAL EDUCATION (SEE PAGE 63XX)**		UNITS
General education*		20

CHEMISTRY COURSES		UNITS
CHEM 105aL	General Chemistry, or	4
CHEM 115aL	Advanced General Chemistry	
CHEM 105bL	General Chemistry, or	4
CHEM 115bL	Advanced General Chemistry	
CHEM 300L	Analytical Chemistry	4
CHEM 322aL	Organic Chemistry	4
CHEM 430a	Physical Chemistry	4

MATH COURSES		UNITS
MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 226	Calculus III	4
MATH 245	Mathematics of Physics and Engineering I	4

PHYSICS COURSES		UNITS
PHYS 151***	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152	Fundamentals of Physics II: Electricity and Magnetism	4

CHEMICAL ENGINEERING COURSES		UNITS
CHE 120	Introduction to Chemical Engineering	3
CHE 205	Numerical Methods in Chemical Engineering	3
CHE 330	Chemical Engineering Thermodynamics	3
CHE 350	Introduction to Separation Processes	3
CHE 442	Chemical Reactor Analysis	3
CHE 443	Viscous Flow	3
CHE 444aBL	Chemical Engineering Laboratory	3-3
CHE 445	Heat Transfer in Chemical Engineering Processes	2
CHE 446	Mass Transfer in Chemical Engineering Processes	2
CHE 460L	Chemical Process Dynamics and Control	3
CHE 480	Chemical Process and Plant Design	3
CHE 485	Computer-Aided Chemical Process Design	3

*GE Category VI is taken concurrently with WRIT 140.

**Diversity course must double count as a GE course in calculating the total unit count for the degree.

***Satisfies GE Category III requirement.

*The university allows engineering majors to replace the GE Category IV with a second course in Categories I, II or VI.

Additional Requirements for Individual Degrees Bachelor of Science in Chemical Engineering

The requirement for the degree in the absence of an area of emphasis is 129 units. A cumulative grade point average of C (2.0) is required in all upper division courses applied toward the major, regardless of the department in which the courses are taken. In addition to the previously listed common requirements, students must also take the following courses:

CHEMISTRY TECHNICAL ELECTIVE		UNITS
CHEM 322bL	Organic Chemistry, or	4
CHEM 430b	Physical Chemistry	

CHEMICAL ENGINEERING COURSES		UNITS
CHE 405	Applications of Probability and Statistics for Chemical Engineers	3
CHE 476	Chemical Engineering Materials	3

CHE Technical Elective
An upper division CHE course

ADDITIONAL ELECTIVES (8-9 UNITS)		UNITS
<i>Suggested Courses</i>		
CE 205	Statics	2
EE 438L	Processing for Microelectronics	3

ISE 460	Engineering Economy, or	3
BUAD 301	Technical Entrepreneurship	

Bachelor of Science in Chemical Engineering Emphasis in Biochemical Engineering

The requirement for the degree with an emphasis in biochemical engineering is 133 units.* A scholarship average of C (2.0) or higher is required for all upper division courses taken in chemical engineering, biomedical engineering and biological sciences. In addition to the previously listed common requirements, students must also take the following courses:

BIOLOGICAL SCIENCES COURSES		UNITS
BISC 300L	Introduction to Microbiology	4
BISC 320L	Molecular Biology	4
BISC 330L	Biochemistry	4

BIO-ELECTIVES		UNITS
BISC 403	Advanced Molecular Biology, or approved bio-engineering elective**	3-4
BME 410	Introduction to Biomaterials and Tissue Engineering	3
CHE 489	Biochemical Engineering	3

ENGINEERING ELECTIVE		UNITS
CHE 405	Applications of Probability and Statistics for Chemical Engineers, or	3
ISE 460	Engineering Economy	

*Students in the biochemical engineering option must take a minimum of 48 engineering units total to graduate.

**Student may combine a 3-unit approved bio-engineering elective with 1 unit of free elective.

Bachelor of Science in Chemical Engineering Emphasis in Environmental Engineering

The requirement for the degree with an emphasis in environmental engineering is 132 units. A cumulative grade point average of C (2.0) is required for all upper division courses applied toward the major, regardless of the department in which the courses are taken. In addition to the previously listed common requirements, students must also take the following courses:

CHEMICAL ENGINEERING COURSES		UNITS
CHE 405	Applications of Probability and Statistics for Chemical Engineers	3
CHE 476	Chemical Engineering Materials	3
CHE 486	Design of Environmentally Benign Process Plants	3

OTHER COURSES		UNITS
CE 453	Water Quality Control	3
CE 463L	Water Chemistry and Analysis	3
ISE 460	Engineering Economy, or	3
BUAD 301	Technical Entrepreneurship	
PTE 463L	Introduction to Transport Processes in Porous Media	3

Air Pollution Elective

ENE 428	Air Pollution Fundamentals, or	
ENE 429	Air Pollution Control	3

**Bachelor of Science in Chemical Engineering
Emphasis in Nanotechnology**

The requirement for the degree with an emphasis in nanotechnology is 128 units. A cumulative grade point average of C (2.0) is required for all upper division courses applied toward the major, regardless of the department in which the courses are taken. In addition to the previously listed common requirements, students must also take the following courses:

CHEMISTRY	UNITS
CHEM 453	Advanced Inorganic Chemistry 4

**CHEMICAL ENGINEERING AND MATERIALS
SCIENCE (11 UNITS)**

CHE 487	Nanotechnology and Nanoscale Engineering through Chemical Processes	3
CHE 391L	Introduction to Nanotechnology Research (2) and	
CHE 491	Nanotechnology Research for Undergraduates (2) or approved upper division undergraduate electives (4)	4
MASC 350L	Nanostructured Materials: Design, Synthesis, and Processing	4

NANOTECHNOLOGY ELECTIVES

EE 438L	Processing for Microelectronics, or	
CHE 489	Biochemical Engineering, or	
PTE 463L	Introduction to Transport Processes in Porous Media	3

OTHER ELECTIVES

CHE 405	Applications of Probability and Statistics for Chemical Engineers, or	
ISE 460	Engineering Economy, or	
BUAD 301	Technical Entrepreneurship	3

**Bachelor of Science in Chemical Engineering
Emphasis in Petroleum Engineering**

The requirement for the degree with an emphasis in petroleum engineering is 133 units. A cumulative grade point average of C (2.0) is required for all upper division courses applied toward the major, regardless of the department in which the courses are taken. In addition to the previously listed common requirements, students must also take the following courses:

CHEMISTRY COURSE	UNITS
<i>Chemistry Technical Elective</i>	
CHEM 322bL	Organic Chemistry, or
CHEM 430b	Physical Chemistry 4

CHEMICAL ENGINEERING COURSES

CHE 405	Applications of Probability and Statistics for Chemical Engineers	3
CHE 476	Chemical Engineering Materials	3

PETROLEUM ENGINEERING COURSES

PTE 461	Formation Evaluation	3
PTE 463L	Introduction to Transport Processes in Porous Media	3
PTE 464L	Petroleum Reservoir Engineering	3
PTE 465L	Drilling Technology and Subsurface Methods	3

OTHER COURSE

ISE 460	Engineering Economy, or	
BUAD 301	Technical Entrepreneurship	3

**Bachelor of Science in Chemical Engineering
Emphasis in Polymer/Materials Science**

The requirement for the degree with an emphasis in polymer/materials science is 133 units. A cumulative grade point average of C (2.0) is required for all upper division courses applied toward the major, regardless of the department in which the courses are taken. In addition to the previously listed common requirements, students must also take the following courses:

CHEMISTRY COURSES

CHEM 322bL	Organic Chemistry, or	
CHEM 430b	Physical Chemistry	4

**OTHER CHEMICAL ENGINEERING/
MATERIALS SCIENCE COURSES**

CHE 472	Polymer Science and Engineering	3
CHE 476	Chemical Engineering Materials, or	
MASC 310	Materials Behavior and Processing	3
MASC 350L	Nanostructured Materials: Design, Synthesis, and Processing	3

**POLYMER/MATERIALS ELECTIVES
(CHOOSE THREE COURSES)**

BME 410	Introduction to Biomaterials and Tissue Engineering	3
CHE 474L	Polymer Science and Engineering Laboratory	3
CHE 475	Physical Properties of Polymers	3
CHE 477	Computer Assisted Polymer Engineering and Manufacturing	3
CHE 487	Nanotechnology and Nanoscale Engineering through Chemical Processes	3
EE 438L	Processing for Microelectronics	3
MASC 440	Materials and the Environment	3

OTHER COURSE

CHE 405	Applications of Probability and Statistics for Chemical Engineers, or	
ISE 460	Engineering Economy, or	
BUAD 301	Technical Entrepreneurship	3

**Minor in Engineering Technology
Commercialization**

See listing in the Special Educational Opportunities section, page 586xx.

Graduate Degrees**Master of Science in Chemical Engineering**

The Master of Science in chemical engineering is awarded in strict conformity with the general requirements of the USC Viterbi School of Engineering with the exception that the minimum unit requirement is 28. Registration in either CHE 550ab or CHE 590 is required.

Engineer in Chemical Engineering

Requirements for the Engineer in chemical engineering are the same as set forth in the general requirements. See general requirements for graduate degrees. Only available to graduate students currently enrolled.

Doctor of Philosophy

The Doctor of Philosophy (Ph.D.) degree in chemical engineering is awarded in conformity with the general requirements of the Graduate School. See general requirements for graduate degrees.

Departmental Policies and Requirements

In addition to the general requirements for the Ph.D. described in this catalogue, candidates in chemical engineering are required to demonstrate proficiency in the following fields: thermodynamics, fluid flow, heat and mass transfer and chemical engineering kinetics. Registration in CHE 550ab is required of all students. More detailed statements of the departmental requirements may be found in a brochure available upon request from the Mork Family Department of Chemical Engineering and Materials Science office.

Chemical Engineering Three-Two Plan

A special curriculum is available for obtaining a Bachelor of Science degree in chemical engineering and a Bachelor of Science or Bachelor of Arts degree in a letters, arts and sciences major in five years. For further information see departmental advisers.

Similar programs are available in cooperation with certain liberal arts colleges. Such programs are particularly suited for obtaining a Bachelor of Science in chemistry at the liberal arts college and a Bachelor of Science in chemical engineering at USC.

**Graduate Certificate in Engineering Technology
Commercialization**

See listing in the Special Educational Opportunities section, page 586xx.

Courses of Instruction

CHEMICAL ENGINEERING (CHE)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

CHE 120 Introduction to Chemical Engineering (3, Sp) Problem-solving techniques in chemical engineering using graphics and computers. Mass and heat balances. *Corequisite*: MATH 125; CHEM 105aL or CHEM 115aL.

CHE 205 Numerical Methods in Chemical Engineering (3, Sp) Computational tools for solving numerical problems in Chemical Engineering. *Prerequisite*: MATH 125.

CHE 330 Chemical Engineering Thermodynamics (3, Fa) Elements of chemical engineering thermodynamics, including generalized correlations of properties of materials, phase behavior, physical and chemical equilibria. *Corequisite*: MATH 226.

CHE 350 Introduction to Separation Processes (3, Sp) Use of equilibrium phase relations and principles of material and energy balance for design, operation, and optimization of separation procedures such as distillation, absorption, etc. *Prerequisite*: CHEM 105bL or CHEM 115bL; *recommended preparation*: CHE 330.

CHE 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

CHE 391L Introduction to Nanotechnology Research (2) Planning and execution of an experiment, and presentation of findings through oral presentations and a written report. Application of the scientific method learned through immersion in a lab environment. Graded CR/NC.

CHE 405 Applications of Probability and Statistics for Chemical Engineers (3, Fa) Principles of probability and statistics, random variables and random functions. Application to chemical engineering problems, including process design, process safety, heterogeneous materials and processes. *Prerequisite*: MATH 245.

CHE 410 Introduction to Biomaterials and Tissue Engineering (3, Fa) (Enroll in BME 410)

CHE 442 Chemical Reactor Analysis (3, Fa) Basic concepts of chemical kinetics and chemical reactor design. *Prerequisite*: MATH 245.

CHE 443 Viscous Flow (3, Sp) Constitutive equations and rate laws, momentum equations and kinetic theory of Newtonian, Non-Newtonian and complex flows. Applications to chemical engineering systems. *Corequisite*: CHE 350, MATH 245.

CHE 444abL Chemical Engineering Laboratory (3-3, FaSp) Resolution of chemical engineering problems that require original planning, observations, and data interpretation. Written and oral reports. *Prerequisite*: CHE 330, CHE 350, CHE 442; *corequisite*: CHE 443.

CHE 445 Heat Transfer in Chemical Engineering Processes (2) Phenomenological rate laws, differential and macroscopic equations, and elementary kinetic theory of heat transfer processes with emphases on conduction and convection. (Duplicates credit in AME 331.) *Prerequisite*: CHE 443, MATH 245.

CHE 446 Mass Transfer in Chemical Engineering Processes (2, Sp) Molecular and continuum approaches to diffusion and convection in fluids and multicomponent mixtures; simultaneous mass, heat and momentum transfer; steady-state and time-dependent diffusion; Maxwell-Stefan equations. *Prerequisite*: MATH 245, CHE 443, CHE 445.

CHE 460L Chemical Process Dynamics and Control (3, Sp) Simulation, stability, and automatic control of chemical processes. Open and closed loop control schemes and introduction to optimal control theory. Computer implementation and laboratory application. *Prerequisite*: CHE 120; *corequisite*: MATH 245.

CHE 461 Formation Evaluation (3) (Enroll in PTE 461)

CHE 462 Economic, Risk and Formation Productivity Analysis (4) (Enroll in PTE 462)

CHE 463L Introduction to Transport Processes in Porous Media (3) (Enroll in PTE 463L)

CHE 464L Petroleum Reservoir Engineering (3) (Enroll in PTE 464L)

CHE 465L Drilling Technology and Subsurface Methods (3) (Enroll in PTE 465L)

CHE 472 Polymer Science and Engineering (3,Sp) The preparation, characterization, and properties of synthetic polymers. An interdisciplinary approach to polymers as materials. *Recommended preparation*: CHEM 322aL.

CHE 474L Polymer Science and Engineering Laboratory (3, Sp) Experimental methods for the preparation, characterization, and properties of synthetic polymers. *Recommended preparation*: CHE 472.

CHE 475 Physical Properties of Polymers (3, Fa) Theoretical methods and semi-empirical correlations for estimating mechanical, thermodynamic, transport, optical, and electrical properties of polymer solutions, melts, networks, glasses, polymer blends and semi-crystalline polymers. *Recommended preparation*: CHE 472 and CHEM 430a.

CHE 476 Chemical Engineering Materials (3, Sp) Chemical and physical properties of solid materials used by chemical engineers, including polymers, metals, and ceramics. Materials design for industrial applications. *Prerequisite*: CHEM 322aL.

CHE 477 Computer Assisted Polymer Engineering and Manufacturing I (3, Sp) Estimation of physical, mechanical, chemical and processing properties of thermal plastics. Major molding processes. Mold flow simulation and residual stresses analysis. Case studies. *Prerequisite*: junior class standing.

CHE 480 Chemical Process and Plant Design (3, Sp) Applications of unit operations, thermodynamics, kinetics, and economic balance; energy conservation in heat exchanger networks and in sequencing of separational devices. Safety aspects. *Prerequisite*: senior standing.

CHE 485 Computer-Aided Chemical Process Design (3, Fa) Use and optimization of modern computer software for chemical process design. *Prerequisite*: CHE 442, CHE 443.

CHE 486 Design of Environmentally Benign Process Plants (3, Sp) Chemical Process Plants interact with the environment as an integrated system. This course discusses design procedures to minimize unwanted effluents to air, water and solid wastes. *Corequisite*: CHE 480 or CHE 485.

CHE 487 Nanotechnology and Nanoscale Engineering through Chemical Processes (3) Properties and processing of nanomaterials including polymeric, metallic, and ceramic nanoparticles, composites, colloids, and surfactant self-assembly for templated nanomaterial production. *Prerequisite*: CHEM 105aL or CHEM 115aL or MASC 110L.

CHE 488 Molecular and Cellular Bioengineering (3, Fa) Design, synthesis, and analysis of biological molecules; routes to understand and engineer living systems at the molecular and cellular level; systems and synthetic biology. *Prerequisite*: BISC 320.

CHE 489 Biochemical Engineering (3, Sp) Application of chemical engineering principles to biological and biochemical processes and materials. Design of biochemical reactors and of processes for separation and purification of biological products. *Prerequisite*: CHE 330, BISC 320L.

CHE 490x Directed Research (1-8, max 12) Individual research and readings. Not available for graduate credit.

CHE 491 Nanotechnology Research for Undergraduates (2, max 4) Independent research in nanotechnology. Research project selected by the student in close consultation with a research adviser. Open only to juniors and seniors. *Prerequisite*: CHE 391L.

CHE 499 Special Topics (2-4, max 8) Course content to be selected each semester from recent developments in chemical engineering and related fields.

CHE 501 Modeling and Analysis of Chemical Engineering Systems (3, Fa) Application of mathematics to problems in chemical engineering; mathematical modeling, differential and integral equations, linear systems analysis and stability, asymptotic and numerical methods. Graduate standing.

CHE 502 Numerical Methods for Diffusive and Convective Transport (3, Sp) Numerical solution of ordinary and partial differential equations describing fluid flow, diffusion with chemical reaction, and conduction in heterogeneous media. Graduate standing.

CHE 510 Energy and Process Efficiency (3, Sp) Management and engineering strategies utilized to improve energy efficiency. Open only to graduate students.

CHE 513 Principles of Combustion (3) (Enroll in AME 513)

CHE 523 Principles of Electrochemical Engineering (3) (Enroll in MASC 523)

CHE 530 Thermodynamics for Chemical Engineers (3, Sp) Application of thermodynamics to chemical engineering systems. *Recommended preparation:* CHE 330.

CHE 531 Enhanced Oil Recovery (3) (Enroll in PTE 531)

CHE 532 Vapor-Liquid Equilibrium (3) Thermodynamics of phase relations; prediction and correlation of phase behavior. *Prerequisite:* CHE 330.

CHE 540 Viscous Flow (3) Fluid mechanical problem of interest to chemical engineers involving laminar flows of incompressible fluids, viscous-dominated creeping flows, and motion of bubbles and drops. *Prerequisite:* CE 309 or AME 309 or CHE 443.

CHE 541 Mass Transfer (3) Fundamentals of mass transfer within a single phase and between phases; applications to separation processes. *Recommended preparation:* CHE 445.

CHE 542 Chemical Engineering Kinetics (3, Sp) Reaction kinetics applied to problems of engineering design and operation. *Recommended preparation:* CHE 442.

CHE 544 Heat Transmission (3) Principles of conduction, radiation, and convection of heat; application to chemical and related industries. *Recommended preparation:* CHE 330, CHE 445.

CHE 550ab Seminars in Chemical Engineering (0-1, max 2, FaSp) Seminars to cover recent developments in the field of chemical engineering given by invited speakers. Master's students must register for two semesters; Ph.D. students must register for four semesters. Graded IP/CR/NC. *Recommended preparation:* graduate standing.

CHE 554 Principles of Tissue Engineering (3, Fa) Advanced scientific and engineering principles of tissue engineering including stem cell biology, biomaterial scaffolds, protein-surface interaction, bioreactor, and selected bioartificial organs (e.g., kidney, bone, skin). *Recommended preparation:* CHE 476, CHE 489.

CHE 560 Advanced Separation and Bioseparation Processes (3, Sp) Experimental techniques for separation and bioseparation processes and theoretical and computational techniques for modeling them. Graduate standing.

CHE 572 Advanced Topics in Polymer Kinetics and Rheology (3, Fa) Kinetics of polymer synthesis reactions and rheology of polymer solutions. *Recommended preparation:* CHE 442, CHE 472.

CHE 582 Fluid Flow and Transport Processes in Porous Media (3) (Enroll in PTE 582)

CHE 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

CHE 594abz Master's Thesis (2-2-0) Credit on acceptance of thesis. Graded IP/CR/NC.

CHE 596 Chemical Reactions in the Atmosphere (3) (Enroll in ENE 596)

CHE 599 Special Topics (2-4, max 9) Course content will be selected each semester to reflect current trends and developments in the field of chemical engineering.

CHE 611 Stochastic Modeling and Simulation (3) (Enroll in CE 611)

CHE 690 Directed Research (1-4, max 8, FaSpSm) Laboratory study of specific problems by candidates for the degree Engineer in Chemical Engineering. Graded CR/NC.

CHE 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

CHE 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC.

Materials Science — Mork Family Department of Chemical Engineering and Materials Science

Vivian Hall of Engineering 602

(213) 740-4339

FAX: (213) 740-7797

Email: chemsmas@vsoe.usc.edu

chems.usc.edu

Chair: Steven R. Nutt, Ph.D.

Faculty

Fluor Early Career Chair in Engineering: Andrea M. Armani, Ph.D. (Chemistry, Electrical Engineering)

M.C. Gill Chair in Composite Materials: Steven R. Nutt, Ph.D. (Aerospace and Mechanical Engineering)

Kenneth T. Norris Professor of Engineering: Anupam Madhukar, Ph.D. (Physics)

Professors: P. Daniel Dapkus, Ph.D. (Electrical Engineering); Martin Gundersen, Ph.D. (Electrical Engineering); Rajiv K. Kalia, Ph.D. (Physics and Computer Science); Michael E. Kassner, Ph.D. (Aerospace and Mechanical Engineering); Terence G. Langdon, Ph.D., D.Sc. (Aerospace and Mechanical

Engineering and Earth Sciences); Anupam Madhukar, Ph.D. (Physics); Florian Mansfeld, Ph.D. (Chemical Engineering); Aiichiro Nakano, Ph.D. (Computer Science, Physics and Biomedical Engineering); Steven R. Nutt, Ph.D. (Aerospace and Mechanical Engineering); Charles G. Sammis, Ph.D. (Earth Sciences)*; Armand R. Tanguay Jr., Ph.D. (Electrical Engineering, Biomedical Engineering); Mark E. Thompson, Ph.D. (Chemistry); Priya Vashishta, Ph.D. (Physics, Computer Science and Biomedical Engineering); Chongwu Zhou, Ph.D. (Chemistry, Electrical Engineering)

Associate Professor: Edward Goo, Ph.D.

Assistant Professors: Andrea Armani, Ph.D. (Electrical Engineering); Andrea Hodge, Ph.D. (Aerospace and Mechanical Engineering); Jongseung Yoon, Ph.D.

Emeritus Professors: Murray Gershenzon, Ph.D. (Electrical Engineering); Ronald Salovey, Ph.D.

*Recipient of university-wide or school teaching award.

Minor in Materials Science

A minor in materials science is open to all undergraduate students in engineering. This minor provides students with the background and skills necessary to understand and use advanced materials in different engineering applications. Students are required to complete a minimum of 16 units of course work consisting of both core requirements and elective courses. Students must include at least four upper division courses of either three or four units in the minor program.

Students must apply to the Viterbi School of Engineering for the minor, and departmental approval is required. The program is outlined as follows:

REQUIRED COURSES		UNITS
CE 225	Mechanics of Deformable Bodies	3
CHE 476	Chemical Engineering Materials, or	
CE 334L	Mechanical Behavior of Materials	3
MASC 310	Materials Behavior and Processing	3

MASC 440	Materials and the Environment	3
Adviser approved electives	(minimum)	4
		16

ELECTIVES		UNITS
BME 410	Introduction to Biomaterials and Tissue Engineering	3
CE 334L	Mechanical Behavior of Materials	3
CE 428	Mechanics of Materials	3
CE 467L	Geotechnical Engineering	4
CHE 472	Polymer Science and Engineering	3
CHE 476	Chemical Engineering Materials	3
MASC 350	Nanostructured Materials: Design, Synthesis, and Processing	3
MASC 439	Principles of Semiconductor Processing	3

Master of Science in Materials Science

In addition to the general requirements for the Master of Science degree, add the following required courses: CHE 501; EE 471; MASC 501, MASC 503, MASC 504, MASC 505 and MASC 561. The six remaining units for the degree may be electives chosen with departmental approval.

Engineer in Materials Science

Requirements for the Engineer in materials science degree are the same as set forth in the general requirements for graduate degrees.

Master of Science in Materials Engineering

Students with an interest in the characterization, selection and processing of engineering materials, and in materials problems related to engineering design may work toward a Master of Science in materials engineering. This degree is awarded in conformity with the general requirements of the Viterbi School of Engineering. Students may elect to work for this degree in either the Materials Science or Aerospace and Mechanical Engineering departments. The specific courses that constitute an acceptable program must be approved in advance by the administering department.

Doctor of Philosophy in Materials Science

The Doctor of Philosophy with a major in materials science is awarded in strict conformity with the general requirements of the USC Graduate School. It includes the course requirements for the Master of Science degree. See general requirements for graduate degrees.

Courses of Instruction

MATERIALS SCIENCE (MASC)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

MASC 110L Materials Science (4, FaSp) Chemical bonding and structure in crystalline, amorphous, and molecular solids; tendency and mechanisms for chemical change; homogeneous and heterogeneous equilibria. *Prerequisite*: high school chemistry.

MASC 310 Materials Behavior and Processing (3)

Principles of mechanical behavior and processing of materials. Relationships between mechanical properties, microstructure, and processing methods. Composites and nonmetallics included.

MASC 334L Mechanical Behavior of Materials (3) (Enroll in CE 334L)

MASC 350L Nanostructured Materials: Design, Synthesis, and Processing (3, Sp) Structure, properties, synthesis, processing and design of metallic, ceramic, polymeric, electronic, photonic, composite, nanophase and biomaterials; nanostructures, microfabrication and smart materials. *Prerequisite*: CHEM 105a or CHEM 115a or MASC 110L, PHYS 152.

MASC 437 Fundamentals of Solid State (3) Atomic theory; wave mechanics; crystal structure; lattice vibrations; elasticity theory; free electron and tight bonding approximations. *Prerequisite*: MASC 110L or EE 338, PHYS 153L, and MATH 445.

MASC 438L Processing for Microelectronics (3) (Enroll in EE 438L)

MASC 439 Principles of Semiconductor Processing (3) Principles relevant to semiconductor processing are covered. Topics include bulk and epitaxial crystal growth, photolithography, evaporation, sputtering, etching, oxidation, alloying, and ion implantation. *Prerequisite*: MASC 110L, EE 338.

MASC 440 Materials and the Environment (3, Sp)

Interactions of metals, alloys and composite materials with liquid and gaseous corrosive environments; corrosion protection by alloying and application of inhibitors and metallic or organic coatings.

MASC 471 Applied Quantum Mechanics for Engineers (3) (Enroll in EE 471)

MASC 472 Polymer Science and Engineering (3) (Enroll in CHE 472)

MASC 475 Physical Properties of Polymers (3) (Enroll in CHE 475)

MASC 476 Chemical Engineering Materials (3) (Enroll in CHE 476)

MASC 499 Special Topics (2-4, max 8) Course content will be selected each semester to reflect current trends and developments in the field of materials science.

MASC 501 Solid State (3, Sp) Atomic structure, bonding in covalent, ionic and Van der Waals crystals, Brillouin zones, lattices, diffraction, electronic states, lattice vibrations, specific heat, electrical conductivity, and magnetism. *Prerequisite*: EE 471.

MASC 502 Advanced Solid State (3, Fa) Semiconductors, dielectrics and metals, thermoelectric effects, magnetism, magnetic resonance and superconductivity. *Prerequisite*: MASC 501.

MASC 503 Thermodynamics of Materials (3, Fa)

Classical thermodynamics, chemical potential, pure phases and mixtures; interphase relationships; binary and ternary solutions; free energy and activity; galvanic cell, electrochemical potential and Pourbaix diagram.

MASC 504 Diffusion and Phase Equilibria (3, Sp)

Phase equilibria; phase diagrams; diffusion; planar defects; nucleation and growth; spinodal decomposition; phase transformation. *Prerequisite*: MASC 503.

MASC 505 Crystals and Anisotropy (3, Fa) Stereographic projection; Laue back reflection method; crystal orientation; line and planar crystalline defects; tensors; susceptibility; permeability and permittivity; stress and strain; piezoelectricity; elasticity.

MASC 506 Semiconductor Physics (3, Fa) (Enroll in EE 506)

MASC 511 Materials Preparation (3) Principles and techniques of materials preparation; purification, crystal growth from liquid and vapor phases, sintering. *Prerequisite*: MASC 504.

MASC 514L Processing of Advanced Semiconductor Devices (3, Fa)

Statistical design of experiments, vapor deposition of thin film dielectrics, plasma etching, advanced lithography, in-situ sensors, process monitoring, quality control, assurance/reliability. *Prerequisite*: EE 504.

MASC 523 Principles of Electrochemical Engineering (3)

Electrochemical techniques; mass, charge, and heat transfer; electrochemical thermodynamics and electrode kinetics; electrochemical reactors; optimization; materials and corrosion; experimental modeling of industrial processes.

MASC 524 Techniques and Mechanisms in Electrochemistry (3)

Modern electrochemistry; in-situ techniques; in-situ probes of the near-electrode region; ex-situ emersion techniques; cyclic voltammetry, electrooxidation, electrochemical reduction, reactive film formation, enzyme electrochemistry.

MASC 534 Materials Characterization (3, Fa)

Characterization of solids by optical microscopy, electron microscopy, (TEM, SEM) and elemental and structural analysis (EPMA, ESCA, AES, SIMS, HEED, LEED, SED).

MASC 535L Transmission Electron Microscopy (4)

Transmission electron microscopy and techniques. Specimen-electron beam interaction, electron diffraction and image formation. X-ray microanalysis. Laboratory involves hands-on training on the transmission electron microscope. (Duplicates credit in former MASC 536L.) *Recommended preparation*: MASC 505.

MASC 539 Engineering Quantum Mechanics (3) (Enroll in EE 539)

MASC 548 Rheology of Liquids and Solids (3) (Enroll in CHE 548)

MASC 551 Mechanical Behavior of Engineering Materials (3, Sp) Mechanical properties of materials; macroscopic mechanical behavior related to structure and microstructure of the material; elementary dislocation theory related to basic strengthening mechanisms; fatigue and fracture; nanomaterials. *Recommended preparation:* MASC 310.

MASC 559 Creep (3) (Enroll in AME 559)

MASC 560 Fatigue and Fracture (3) (Enroll in AME 560)

MASC 561 Dislocation Theory and Applications (3, Sp) Elasticity theory; types, sources, motion, interaction of dislocations; stress fields and strain energies; partial dislocations and stacking faults; principles of work-hardening.

MASC 570 Introduction to Photovoltaic Solar Energy Conversion (3) Introduction to the physical principles, implementation materials, devices, and manufacturing costs of solar cells and panels for photovoltaic conversion of solar radiation to electricity.

MASC 575 Basics of Atomistic Simulation of Materials (3, Fa) Building a parallel computer from components; molecular dynamics method; computation of structural, thermodynamics and transport properties; simulation projects. *Prerequisite:* Undergraduate course in thermodynamics or statistical physics; *recommended preparation:* Fortran, Unix/Linux.

MASC 576 Molecular Dynamics Simulations of Materials and Processes (3, Sp) Molecular dynamics method for atomistic simulations of materials and processes, simulations using parallel computing, correlation functions for structural and dynamical properties plus simulation project. *Prerequisite:* MASC 575.

MASC 583 Materials Selection (3) (Enroll in AME 588)

MASC 584 Fracture Mechanics and Mechanisms (3) (Enroll in AME 584)

MASC 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MASC 594abz Master's Thesis (2-2-0) For the master's degree. Credit on acceptance of thesis. Graded IP/CR/NC.

MASC 598 Materials Science Seminar (1) Seminar in Materials Science research. To be taken only once for graduate credit. Graded CR/NC.

MASC 599 Special Topics (2-4, max 9)

MASC 601 Advanced Semiconductor Device Physics (3) (Enroll in EE 601)

MASC 606 Nonequilibrium Processes in Semiconductors (3, Sp) (Enroll in EE 606)

MASC 610 Molecular Beam Epitaxy (3) Basic principles, ultra high vacuum, machine considerations, source purity and calibrations temperature measurements, surface morphology and chemistry, growth procedures, III-V, II-VI and silicon MBE. *Prerequisite:* MASC 501, MASC 503.

MASC 690 Directed Research (1-4, max 8) Laboratory study of specific problems by candidates for the degree Engineer in Materials Science. Graded CR/NC.

MASC 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MASC 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC.

Petroleum Engineering — Mork Family Department of Chemical Engineering and Materials Science

Hedco Building 316

(213) 740-0322

FAX: (213) 740-0324

Email: chemspte@vsoe.usc.edu
chems.usc.edu

Chair: Steven R. Nutt, Ph.D.

Director: Iraj Ershaghi, Ph.D., P.E.

Faculty

Zohrab A. Kaprielian Dean's Chair in Engineering
and Chester F. Dolley Chair in Petroleum Engineering:
Yannis C. Yortsos, Ph.D.

Omar B. Milligan Chair in Petroleum Engineering: Iraj
Ershaghi, Ph.D., P.E.

William M. Keck Professor of Energy Resources: Donald
M. Paul, Ph.D.

Associate Professor: Kristian Jessen, Ph.D.

Assistant Professor: Behnam Jafarpour, Ph.D.

Lecturers: Stephen Cheung, Ph.D.; Donald Clarke, M.S.;
Robert Ehrlich, Ph.D.; Donald G. Hill, Ph.D.; Martin
Karrenbach, Ph.D.; Bradford Pierce, M.S.; Andrei Popa,
Ph.D.; Ehsan Tajer, Ph.D.; Wenlong Xu, Ph.D.; Ke-Thia
Yao, Ph.D.; Victor M. Ziegler, Ph.D.

Research Professors: Fred Aminzadeh, Ph.D.; Dongxiao
Zhang, Ph.D.

Emeritus Professor: Elmer L. Dougherty, Ph.D.

Petroleum Engineering Honor Society: Pi Epsilon Tau

Degree Requirements

Bachelor of Science in Chemical Engineering Emphasis in Petroleum Engineering

See the listing under Chemical Engineering, page 612xx.

Bachelor of Science in Mechanical Engineering Emphasis in Petroleum Engineering

See the listing under Aerospace and Mechanical Engineering, page 590xx.

Minor in Petroleum Engineering

A minor in petroleum engineering consisting of 16 required units is available to undergraduate majors in various fields of engineering and applied science. Besides preparing for graduate study in petroleum engineering, the program will prepare students for careers in areas of national need such as the exploration, recovery and production of subterranean resources, and the underground disposal of hazardous wastes.

Prerequisite courses:

MATH 125, MATH 126, MATH 226, MATH 245, PHYS 151L
and CHEM 105aL

REQUIRED COURSES		UNITS
PTE 461	Formation Evaluation	3
PTE 462	Economic, Risk and Formation Productivity Analysis	4
PTE 463L	Introduction to Transport Processes in Porous Media	3
PTE 464L	Petroleum Reservoir Engineering	3
PTE 465L	Drilling Technology and Subsurface Methods	3
		<hr/> 16

Master of Science in Petroleum Engineering

The Master of Science in petroleum engineering is awarded in strict conformity with the general requirements of the Viterbi School of Engineering. Electives vary according to the area of interest. A student may be permitted to elect the program without thesis upon approval from the department.

Master of Science in Petroleum Engineering (Geoscience Technologies)

The Master of Science in Petroleum Engineering (Geoscience Technologies) is a unique degree that emphasizes recent developments in the field of unconventional oil and gas resources and modern techniques for

mapping and monitoring of subterranean resources. The program may be completed via the USC Viterbi School's Distance Education Network (DEN). All courses for the degree must be taken at USC.

Students without a B.S. in Petroleum Engineering will normally be required to complete prerequisite courses before beginning the M.S. program. Specific prerequisite courses are decided upon consultation with the department adviser. Units from these courses cannot be applied toward the degree.

A minimum of 34 units is required to earn the M.S. in Petroleum Engineering (Geoscience Technologies).

CORE REQUIRED COURSES (18 UNITS)		UNITS
PTE 507	Engineering and Economic Evaluation of Subsurface Reservoirs	3
PTE 508	Numerical Simulation of Subsurface Flow and Transport Processes	3
PTE 517	Testing of Wells and Aquifers	3
PTE 531	Enhanced Oil Recovery	3
PTE 555	Well Completion, Stimulation, and Damage Control	3
PTE 582	Fluid Flow and Transport Processes in Porous Media	3

TAKE 4 OUT OF 5 COURSES SHOWN

BELOW (12 UNITS)		UNITS
PTE 502	Advanced Reservoir Characterization	3
PTE 503	Technology of Unconventional Oil and Gas Resources Development	3
PTE 504	Geophysics for Petroleum Engineers	3
PTE 505	Inverse Modeling for Dynamic Data Integration	3
PTE 572	Geostatistics	3

Elective from a group of approved PTE courses: 4

Master of Science in Petroleum Engineering (Smart Oilfield Technologies)

The Master of Science in petroleum engineering (smart oilfield technologies) is awarded in strict conformity with the general requirements of the Viterbi School of Engineering. A student may be permitted to elect the program without thesis upon approval from the department. Course requirements are similar to the existing M.S. degree in petroleum engineering in terms of core requirements.

Certificate in Smart Oilfield Technologies

The certificate in smart oilfield techniques is designed for practicing engineers and scientists who enter petroleum engineering related fields and/or who wish to obtain training in the specific smart oilfields area. The applicants may enroll at USC as limited status students. They must apply and be admitted to the program before they complete 9 units of the required course work. The certificate program is open to applicants with an undergraduate degree in engineering or sciences who meet the admission criteria as limited students. The required courses consist of the following 12 units:

REQUIRED COURSES		UNITS
PTE 586	Intelligent and Collaborative Oilfield Systems Characterization and Management	3
PTE 587	Smart Completions, Oilfield Sensors and Sensor Technology	3
PTE 588	Smart Oilfield Data Mining	3
PTE 589	Advanced Oilfield Operations with Remote Visualization and Control	3

These classes will be available through the USC Distance Education Network (DEN). The credit for classes may be applied toward the M.S. or Ph.D. in petroleum engineering should the student decide later to pursue an advanced degree. In order to be admitted to the M.S. program, the student should maintain a B average or higher in courses for the certificate program and must satisfy all normal admission requirements. All courses for the certificate must be taken at USC.

Engineer in Petroleum Engineering

Requirements for the Engineer degree in petroleum engineering are the same as set forth in the general requirements. See general requirements for graduate degrees.

Doctor of Philosophy

The Doctor of Philosophy with a major in petroleum engineering is also offered. See general requirements for graduate degrees.

Courses of Instruction

PETROLEUM ENGINEERING (PTE)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

PTE 202x Energy and Society (4, Irregular) Study of the impact of the development, production, and global distribution of energy on societal, political, and economic behavior. Not available for major credit to engineering majors. *Prerequisite*: pass Math Skill Level.

PTE 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

PTE 411x Introduction to Transport Processes in Porous Media (3, Fa) Properties of porous rocks; capillary effect, single phase and multiphase flow through porous media; diffusion and dispersion, miscible displacement, heat transfer. Lecture, 3 hours. Not available for credit to Petroleum Engineering majors. *Prerequisite*: MATH 245, CHEM 105aL or CHEM 115aL, PHYS 151L, CE 309.

PTE 412x Petroleum Reservoir Engineering (3, Fa) Properties of reservoir fluids, volumetric and material balances for gas and oil reservoirs; reservoir modeling concepts. Lecture, 3 hours. Not available for credit to Petroleum Engineering majors.

PTE 461 Formation Evaluation (3, Fa) Concepts of petroleum geology, interpretation of downhole surveys and measurements including well logs, MWD, mud logs and samples. *Corequisite*: PTE 463L.

PTE 462 Economic, Risk and Formation Productivity Analysis (4, Sp) Principle of economic evaluation, risk analysis, reserves estimation, decline curves, energy prices, and well transients for flow prediction. *Prerequisite*: PTE 461.

PTE 463L Introduction to Transport Processes in Porous Media (3, Fa) Properties of porous rocks; capillary effect, single-phase and multiphase flow through porous media; diffusion and dispersion, miscible displacement, heat transfer. Lecture, 3 hours; laboratory, 3 hours. *Prerequisite*: MATH 245, CHEM 105aL or CHEM 115aL, PHYS 151L.

PTE 464L Petroleum Reservoir Engineering (3, Sp) Properties of reservoir fluids, volumetric and material balances for gas and oil reservoirs; reservoir modeling concepts. Lecture, 3 hours; laboratory, 3 hours. *Prerequisite*: PTE 463L.

PTE 465L Drilling Technology and Subsurface Methods (3, Fa) Theory and practice in drilling technology; mechanical properties of reservoir rocks; well completion; acidizing and fracturing, oil production technology. Lecture, 3 hours; laboratory, 3 hours. *Prerequisite*: PTE 464L.

PTE 466 Petroleum Geology (3, Sm) Introductory topics of physical and historical geology will be focused on the components that relate to the formation of oil and gas accumulations.

PTE 490x Directed Research (1-8, max 12) Individual research and readings. Not available for graduate credit.

PTE 499 Special Topics (2-4, max 8) Course content to be selected each semester from recent developments in petroleum engineering and related fields.

PTE 502 Advanced Reservoir Characterization (3, Irregular) Sources of data for reservoir characterization; cross-disciplinary integration; geologic models; sequence stratigraphic, lithologic, well test and geophysical models; 4-D seismic; compartmentalized and fractured reservoirs; error and risk analysis. Graduate standing in PTE. *Prerequisite*: PTE 411x, PTE 461.

PTE 503 Technology of Unconventional Oil and Gas Resources Development (3, Fa) Geology of unconventional resources, exploration, development, laboratory testing, drilling, formation evaluation, design and monitoring of hydraulic fracturing, forecasting, technology of oil sand and environmental issues. Open only to graduate students. *Recommended preparation*: PTE 507, graduate standing in petroleum engineering.

PTE 504 Geophysics for Petroleum Engineers (3, Sm) Geosciences concepts and technologies with applications in petroleum engineering: 2D-3D-4D seismic, borehole geophysics, passive seismic, controlled source electromagnetics, geophysical and geological modeling and inversion. Open only to engineering graduate students. *Recommended preparation:* familiarity with Matlab.

PTE 505 Inverse Modeling for Dynamic Data Integration (3, Sp) Introduction to fundamentals of deterministic and stochastic inverse modeling, integration of dynamic data into predictive reservoir models, reservoir parameterization, derivation of adjoint models. Open only to engineering graduate students. *Recommended preparation:* PTE 508, basic knowledge of calculus, linear algebra and probability/statistics.

PTE 506 Geothermal Reservoirs (3, Fa) Geothermal reservoirs, heat and mass flow in fracture network, enhanced geothermal systems (EGS), exploration methods, exploitation of hydrothermal and EGS fields, stimulation, forecasting, power generation. Open only to engineering and geological sciences graduate students. *Recommended preparation:* familiarity with Matlab.

PTE 507 Engineering and Economic Evaluation of Subsurface Reservoirs (3, Fa) Studies, data and methods for estimating size of underground fluid deposits for predicting physical and economic behavior of designed flow schemes, and for quantifying uncertainty. *Prerequisite:* PTE 464L.

PTE 508 Numerical Simulation of Subsurface Flow and Transport Processes (3, Sp) Formulation and solution of the equations describing the underground flow of fluids through porous media. Includes mass (contaminant) transport in single and multiphase flow. *Recommended preparation:* PTE 507.

PTE 511 Advanced Phase Behavior of Petroleum Reservoir Fluids (3, Irregular) From classical thermodynamics to engineering application; equations of state based calculations; PVT experiments; reservoir fluid characterization; PT-flash calculations and stability analysis; compositional grading; transport properties. Open only to graduate students. *Recommended preparation:* CHE 330, MATH 226.

PTE 512 Gas Injection Processes — Analytical Solutions and Analysis (3, Fa) Gas injection and enhanced oil/gas recovery; conservation equations; flow and phase behavior; displacement efficiency; dispersion; method of characteristics; development of multicontact miscibility in multicomponent systems. Open only to graduate students. *Recommended preparation:* CHE 330, MATH 226 and MATH 245 (or similar).

PTE 514 Drilling Engineering (2, 2 years, Fa) Rock mechanics; rotary drilling processes; bit selection; optimizing bit weight and rotational speed; well hydraulics and control; casing design and cementing; directional and offshore drilling.

PTE 517 Testing of Wells and Aquifers (3, Sp) Principles of well testing; down hole device; Aquifer tests; slug tests; DST; pressure transient modeling in homogeneous and heterogeneous systems; parameter estimation; computer aided techniques. *Prerequisite:* PTE 464L.

PTE 531 Enhanced Oil Recovery (3, 2 years, Sm) Survey of current enhanced oil recovery processes, including water-flooding, miscible displacement, and thermal oil recovery. *Prerequisite:* PTE 464L; *recommended preparation:* PTE 507.

PTE 542 Carbonate Rocks (2, Irregular) Classification; porosity development; source rocks; wettability; capillary pressure curves; compressibility; surface areas; relative permeabilities; various petrophysical properties; formation evaluation; overpressures; thin section analysis.

PTE 545 Corrosion Control in Petroleum Production (2, Irregular) Types of corrosion encountered in petroleum production; methods for practical control including use of inhibitors, coatings, and cathodic protection. *Prerequisite:* CHEM 430a.

PTE 555 Well Completion, Stimulation, and Damage Control (3, Sm) This course reviews current practices related to well completion methods, wellbore stimulation, and damage control. Formation damage prevention and stimulation methods are emphasized. *Prerequisite:* graduate standing.

PTE 572 Geostatistics (3, Irregular) Use of geostatistical methods for exploration and development of mineral and petroleum resources, application of semivariogram, kriging, cokriging, nonlinear and parametric estimation and conditional stimulation. Graduate standing. *Recommended preparation:* knowledge of statistics.

PTE 578 Advanced Production Engineering (2, 2 years, Sp) Principles of oil well and gas well production; design of artificial lift systems and surface operations; field problems of enhanced oil recovery operations.

PTE 581 Environmental Technology in the Petroleum Industry (3, Irregular) This course examines engineering and scientific principles necessary for understanding, assessing, and remediating environmental problems in the petroleum industry including drilling, production, transportation and refining operations. Graduate standing.

PTE 582 Fluid Flow and Transport Processes in Porous Media (3, 2 years, Fa) Principles of single and multiphase flow through porous media; mechanisms of immiscible and miscible displacement; momentum, heat and mass transport in porous media.

PTE 586 Intelligent and Collaborative Oilfield Systems Characterization and Management (3, Fa) Review of soft computing methods such as neural networks, fuzzy logic, problematic reasoning in reservoir characterization, dynamic reservoir modeling, oilfield data integration and analysis of uncertainty in prediction. Limited to students with graduate standing. *Recommended preparation:* prerequisites for non-majors.

PTE 587 Smart Completions, Oilfield Sensors and Sensor Technology (3, Sp) Intelligent Wellbore completion, technology of subsurface and surface sensors, deployment and data acquisition, telemonitoring and feedback, reliability of sensors, data transmission, systems networks. *Recommended preparation:* prerequisites for non-majors.

PTE 588 Smart Oilfield Data Mining (3, Fa) Methods for oilfield data mining, data preparation mining images, prediction and knowledge discovery, subset selection, pattern recognition. Limited to students with graduate standing. *Recommended preparation:* prerequisites for non-majors.

PTE 589 Advanced Oilfield Operations with Remote Immersive Visualization and Control (3, Sp) Immersive subsurface and surface environments, web based monitoring and feedback, visualizing risk, untended operation. Limited to students with graduate standing. *Recommended preparation:* prerequisites for non-majors.

PTE 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PTE 594abz Master's Thesis (2-2-0) For the master's degree. Credit on acceptance of thesis. Graded IP/CR/NC.

PTE 599 Special Topics (2-4, max 9) Course content will be selected each semester to reflect current trends and developments in the field of petroleum engineering.

PTE 611 Stochastic Modeling and Simulation (3) (Enroll in CE 611)

PTE 690 Directed Research (1-4, max 8, FaSpSm) Laboratory study of specific problems for candidates for the degree engineer in petroleum engineering. Graded CR/NC.

PTE 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PTE 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC.

Civil Engineering — Sonny Astani Department of Civil and Environmental Engineering

Kaprielian Hall 210

(213) 740-0603

FAX: (213) 744-1426

Email: ceedept@usc.edu
usc.edu/cee

Chair: Lucio Soibelman, Ph.D.

Faculty

Stephen Schrank Early Career Chair in Civil and Environmental Engineering: Burcin Becerik-Gerber, D.Des.

John and Dorothy Shea Early Career Chair in Civil Engineering: Patrick Lynett, Ph.D.

Fred Champion Professor of Civil and Environmental Engineering: Constantinos Sioutas, Sc.D.

Gordon S. Marshall Professor of Engineering Technology: Roger Ghanem, Ph.D. (Aerospace and Mechanical Engineering)

Professors: James C. Anderson, Ph.D.*; Roger Ghanem, Ph.D. (Aerospace and Mechanical Engineering); Ronald C. Henry, Ph.D. (Environmental Engineering); Jiin-Jen Lee, Ph.D., P.E. (Environmental Engineering)*; Vincent W. Lee, Ph.D.; Sami F. Masri, Ph.D. (Aerospace and Mechanical Engineering); Najmedin Meshkati, Ph.D., CPE (Industrial and Systems Engineering); Massoud Pirbazari, Ph.D. (Environmental Engineering, Associate Director of Environmental Engineering); Constantinos Sioutas, Sc.D.; Lucio Soibelman, Ph.D.; Costas Synolakis, Ph.D. (Aerospace Engineering); Mihailo Trifunac, Ph.D.; L. Carter Wellford, Ph.D.; Hung Leung Wong, Ph.D.*

Joint Appointments: Peter Gordon, Ph.D. (Public Policy, Economics); Genevieve Giuliano, Ph.D. (Public Policy); Behrokh Khoshnevis, Ph.D. (Industrial and Systems Engineering); James Moffett, Ph.D. (Marine Environmental Biology); James Moore, Ph.D. (Industrial and Systems Engineering, Public Policy); Firdaus E. Udawadia, Ph.D. (Aerospace and Mechanical Engineering); John P. Wilson, Ph.D. (Sociology)

Associate Professors: Erik A. Johnson, Ph.D. (Associate Chair); Patrick Lynett, Ph.D.

Assistant Professors: George Ban-Weiss, Ph.D.; Burcin Becerik-Gerber, D.Des.; Felipe deBarros, Ph.D.; Ketan Savla, Ph.D.

Adjunct Associate Professor: Le Dam Hanh-Griffin, Ph.D.

Adjunct Assistant Professor: Navid Nastar, Ph.D.

Adjunct Research Professors: Maria I. Todorovska, Ph.D.; Yan Xiao, Ph.D., P.E.; Dongxiao Zhang, Ph.D.

Adjunct Research Assistant Professors: Jose C. Borrero, Ph.D.; John Caffrey, Ph.D.; Scott Fruin, Ph.D. (Environmental Health, Keck School of Medicine)

Professors of Engineering Practice: Gregg E. Bandrow Jr., Ph.D., P.E.; Henry M. Koffman, P.E.

Associate Professor of Engineering Practice: Dana Sherman, Esq.

Emeritus Professors: Mihran S. Agabian, Ph.D., P.E.; George V. Chilingar, Ph.D.; Joseph S. Devinny, Ph.D.; Geoffrey Martin, Ph.D.; Paul Seide, Ph.D.

*Recipient of university-wide or school teaching award.

Chi Epsilon Civil Engineering Honor Society

Chi Epsilon is dedicated to the purpose of maintaining and promoting the status of civil engineering as a profession. Chi Epsilon was organized to recognize the characteristics of the individual civil engineer deemed to be fundamental to the successful pursuit of an engineering career and to aid in the development of those characteristics in the civil engineering student. To contribute to the improvement of the profession, Chi Epsilon fosters the development and exercise of sound traits of character and technical ability among civil engineers.

Chi Epsilon is based on broad principles of scholarship, character, practicality and sociability. Civil engineering students who rank in the upper one-third of the junior or senior class are eligible for membership. These qualifications will make one eligible but not necessarily acceptable. Each member must be well skilled in all four of the basic principles.

Degree Requirements

Educational Program Objectives

Fulfilling the vision of the Sonny Astani Department of Civil and Environmental Engineering, the Viterbi School of Engineering and the University of Southern California, our graduates are expected to perform competently, collaboratively and ethically using the knowledge and skills imparted to them in their program of studies:

(1) Planners, Designers, Constructors and Operators of the Built Environment

Graduates will be successful in their professional career, adapt to the rapid pace of technological and scientific development, and become global leaders in industry, academia or government.

(2) Stewards of Society's Impact on the Natural Environment

Graduates will contribute their knowledge of global and societal issues, energy effective systems, and environmental considerations to create a safe and healthy world and affect public policy.

(3) Leaders and Managers of Society's Project

Graduates will be effective communicators, with multidisciplinary and collaborative skills and the ability to foster a productive and efficient work environment.

(4) Professional Engineers and Role Models

Graduates will uphold high ethical and professional standards, be active in professional organizations, support the advancement of the practice of science and engineering and when appropriate, obtain a professional license.

(5) Innovators and Integrators of Ideas and Technology

Graduates will be prepared to pursue graduate studies in engineering and other disciplines, and will engage in lifelong learning to broaden their abilities, enhance their technical skills and maintain their relevance with technological change.

All curricula leading to a degree must be approved by the Astani Department of Civil and Environmental Engineering; please note this includes transfer credit and units for courses waived for subject credit only, which have been approved through the Degree Progress department.

Bachelor of Science in Civil Engineering (131–132 Unit Program)

The department offers a Bachelor of Science degree in Civil Engineering. Additionally, there are three possible areas of emphases within this civil engineering program major. These are building science, environmental engineering and structural engineering. An area of emphasis appears in parentheses after the primary major name on the transcript.

Bachelor of Science in Civil Engineering

The requirement for the degree is 131–132 units. A cumulative grade point average of C (2.0) is required for all courses taken at USC as well as all upper division courses applied towards the major, regardless of the department in which the courses are taken. In addition, a minimum grade of C must be earned in each of the following courses: CE 205, CE 225, CE 309 and CE 325. See also common requirements for undergraduate degrees section, page 569xx.

COMPOSITION/WRITING REQUIREMENT		UNITS
WRIT 140*	Writing and Critical Reasoning	4
WRIT 340	Advanced Writing	3
GENERAL EDUCATION (SEE PAGE 63XX)		UNITS
General education* +		20
PRE-MAJOR REQUIREMENTS		UNITS
<i>Chemistry Requirement</i>		
CHEM 105aL	General Chemistry, or	4
CHEM 115aL	Advanced General Chemistry	

Math Requirement

MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 226	Calculus III	4
MATH 245	Mathematics of Physics and Engineering I	4

Physics Requirement

PHYS 151L**	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4

Other Requirements

GEOL 305Lx	Introduction to Engineering Geology, or	
BISC 220L	General Biology: Cell Biology and Physiology	4

MAJOR REQUIREMENTS**UNITS***Engineering*

ENGR 102	Engineering Freshman Academy	2
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Civil Engineering

CE 106	Design and Planning of Civil Engineering Systems, or	2
CE 110	Introduction to Environmental Engineering	3
CE 107	Introduction to Civil Engineering Graphics	3
CE 108	Introduction to Computer Methods in Civil Engineering	2
CE 205	Statics	2
CE 207L	Introduction to Design of Structural Systems	2
CE 225	Mechanics of Deformable Bodies	3
CE 309	Fluid Mechanics	3
CE 325	Dynamics	3
CE 334L	Mechanical Behavior of Materials	3
CE 358	Theory of Structures I	3
CE 402	Computer Methods in Engineering	3
CE 408	Risk Analysis in Civil Engineering	3
CE 451	Water Resources Engineering	3
CE 453	Water Quality Control	3
CE 456	Design of Steel Structures	3
CE 467L	Geotechnical Engineering	4
CE 471	Principles of Transportation Engineering	3

Capstone Courses

CE 473	Engineering Law, Finance, and Ethics	3
CE 480	Structural System Design, or	
CE 465	Water Supply and Sewage System Design	3

Courses from Other Engineering Departments

EE 202L	Linear Circuits, or	
EE 326L	Essentials of Electrical Engineering	4
		60-61

MAJOR ELECTIVES**UNITS**

Elective	Civil Engineering	6
Design Kernel***	Civil Engineering Design Kernel Course	6

Total units: 131-132

*GE Category VI is taken concurrently with WRIT 140.

**Satisfies GE Category III requirement.

***Design kernel courses must be selected from the following list of design courses: CE 457, CE 465, CE 466, CE 476, CE 478, CE 482, CE 484 and CE 485.

*The university allows engineering majors to replace the GE Category IV with a second course in Categories I, II or VI.

Tracks

In addition to the core courses, students are required to select one of the following tracks: General, Construction or Water Resources.

General Track

Choose one of the following: CE 480 as the capstone course and CE 482 as a required design kernel course; or CE 465 as the capstone course and CE 466 or CE 476 as a required design kernel course.

The civil engineering electives may be chosen freely.

Construction Track

Select CE 480 as the capstone course and CE 482 as a required design kernel course. Replace CE 453 with CE 412. CE 460 is a required elective. The other civil engineering elective must be chosen from the following list: CE 461, CE 462, CE 469 and CE 470.

Water Resources Track

Select CE 465 as the capstone course and select one of the following as a required design kernel course: CE 466 or CE 476. The civil engineering electives must be selected from the following list: CE 466, CE 476, CE 477 and CE 490.

All curricula leading to a degree must be approved by the Astani Department of Civil and Environmental Engineering; please note this includes transfer credit and units for courses waived for subject credit only, which have been approved through the Degree Progress department.

Bachelor of Science in Civil Engineering Emphasis in Structural Engineering

The requirement for the degree with an emphasis in structural engineering is 131-132 units. A cumulative grade point average of C (2.0) is required for all courses taken at USC as well as all upper division courses applied towards the major, regardless of the department in which the courses are taken. In addition, a minimum grade of C must be earned in each of the following courses: CE 205, CE 225, CE 309 and CE 325. See also common requirements for undergraduate degrees section, page 569xx.

COMPOSITION/WRITING REQUIREMENTS**UNITS**

WRIT 140*	Writing and Critical Reasoning	4
WRIT 340	Advanced Writing	3

GENERAL EDUCATION (SEE PAGE 63XX)**UNITS**

General education* +		20
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PRE-MAJOR REQUIREMENTS**UNITS***Chemistry Requirement*

CHEM 105aL	General Chemistry, or	
CHEM 115aL	Advanced General Chemistry	4

Math Requirement

MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 226	Calculus III	4
MATH 245	Mathematics of Physics and Engineering I	4

Physics Requirement

PHYS 151L**	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4

Other Requirements

GEOL 305Lx	Introduction to Engineering Geology	4
		32

MAJOR REQUIREMENTS**UNITS***Engineering*

ENGR 102	Engineering Freshman Academy	2
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Civil Engineering

CE 106	Design and Planning of Civil Engineering Systems, or	2
CE 110	Introduction to Environmental Engineering	3
CE 107	Introduction to Civil Engineering Graphics	3
CE 108	Introduction to Computer Methods in Civil Engineering	2
CE 205	Statics	2
CE 207L	Introduction to Design of Structural Systems	2
CE 225	Mechanics of Deformable Bodies	3
CE 309	Fluid Mechanics	3
CE 325	Dynamics	3
CE 334L	Mechanical Behavior of Materials	3
CE 358	Theory of Structures I	3
CE 402	Computer Methods in Engineering	3
CE 408	Risk Analysis in Civil Engineering	3
CE 451	Water Resources Engineering	3
CE 456	Design of Steel Structures	3
CE 457	Reinforced Concrete Design	3
CE 458	Theory of Structures II	3
CE 459	Introduction to Structural Dynamics	3
CE 460	Construction Engineering	3

CE 467L	Geotechnical Engineering	4
CE 473	Engineering Law, Finance, and Ethics	3

Capstone Courses

CE 480	Structural System Design	3
CE 482	Foundation Design	3

Courses from Other Engineering Departments

EE 202L	Linear Circuits, or	
EE 326L	Essentials of Electrical Engineering	4

69-70

MAJOR ELECTIVES

Elective***	Civil Engineering	3
Total units:		131-132

*GE Category VI is taken concurrently with WRIT 140.

**Satisfies GE Category III requirement.

***The civil engineering elective must be selected from the following courses: CE 409a, CE 478.

*The university allows engineering majors to replace the GE Category IV with a second course in Categories I, II or VI.

All curricula leading to a degree must be approved by the Astani Department of Civil and Environmental Engineering; please note this includes transfer credit and units for courses waived for subject credit only, which have been approved through the Degree Progress department.

Bachelor of Science in Civil Engineering Emphasis in Building Science

The requirement for the degree with an emphasis in building science is 135-136 units. A cumulative grade point average of C (2.0) is required for all courses taken at USC as well as all upper division courses applied towards the major, regardless of the department in which the courses are taken. In addition, a minimum grade of C must be earned in each of the following courses: CE 205, CE 225, CE 309 and CE 325. See also the common requirements for undergraduate degrees section, page 569xx.

COMPOSITION/WRITING REQUIREMENT

WRIT 140*	Writing and Critical Reasoning	4
WRIT 340	Advanced Writing	3

GENERAL EDUCATION (SEE PAGE 63XX)

General education* +		20
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PRE-MAJOR REQUIREMENTS**Chemistry Requirement**

CHEM 105aL	General Chemistry, or	
CHEM 115aL	Advanced General Chemistry	4

Math Requirement

MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 226	Calculus III	4
MATH 245	Mathematics of Physics and Engineering I	4

Physics Requirement

PHYS 151L**	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4

Other Requirements

GEOL 305Lx	Introduction to Engineering Geology	4
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MAJOR REQUIREMENTS**Engineering**

ENGR 102	Engineering Freshman Academy	2
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Civil Engineering

CE 106	Design and Planning of Civil Engineering Systems, or	2
CE 110	Introduction to Environmental Engineering	3
CE 107	Introduction to Civil Engineering Graphics	3
CE 108	Introduction to Computer Methods in Civil Engineering	2
CE 205	Statics	2
CE 207L	Introduction to Design of Structural Systems	2
CE 225	Mechanics of Deformable Bodies	3
CE 309	Fluid Mechanics	3
CE 325	Dynamics	3
CE 334L	Mechanical Behavior of Materials	3
CE 358	Theory of Structures I	3
CE 408	Risk Analysis in Civil Engineering	3
CE 456	Design of Steel Structures	3
CE 457	Reinforced Concrete Design	3
CE 458	Theory of Structures II	3
CE 467L	Geotechnical Engineering	4

Architecture courses

ARCH 114	Architecture: Culture and Community	2
ARCH 214b	History of Architecture	3
ARCH 205abL***	Building Science I	4-4
ARCH 305abL***	Building Science II	4-4
ARCH 405abL***	Building Science III	4-4

MAJOR ELECTIVES

Elective****	Civil Engineering	3
Total units:		135-136

*GE Category VI is taken concurrently with WRIT 140.

**Satisfies GE Category III requirement.

***The School of Architecture requires a minimum grade of C in ARCH 205ab, ARCH 305ab and ARCH 405ab in order to continue in the building science design sequence.

****The civil engineering elective must be selected from the following courses: CE 451, CE 453, CE 460 and CE 471.

*The university allows engineering majors to replace the GE Category IV with a second course in Categories I, II or VI.

All curricula leading to a degree must be approved by the Astani Department of Civil and Environmental Engineering; please note this includes transfer credit and units for courses waived for subject credit only, which have been approved through the Degree Progress department.

Bachelor of Science in Civil Engineering Emphasis in Environmental Engineering

The requirement for the degree with an emphasis in environmental engineering is 129-130 units. A cumulative grade point average of C (2.0) is required for all courses taken at USC as well as all upper division courses applied toward the major, regardless of the department in which the courses are taken. In addition, a minimum grade of C must be earned in each of the following courses: CE 205, CE 225, CE 309 and CE 325. See also common requirements for undergraduate degrees section, page 569xx.

COMPOSITION/WRITING REQUIREMENT

WRIT 140*	Writing and Critical Reasoning	4
WRIT 340	Advanced Writing	3

GENERAL EDUCATION (SEE PAGE 63XX)

General education* +		20
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PRE-MAJOR REQUIREMENTS**Chemistry Requirement**

CHEM 105aL	General Chemistry, or	
CHEM 115aL	Advanced General Chemistry	4
CHEM 105bL	General Chemistry, or	
CHEM 115bL	Advanced General Chemistry	4

Math Requirement

MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 226	Calculus III	4
MATH 245	Mathematics of Physics and Engineering I	4

Physics Requirement

PHYS 151L**	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4

Other Requirement

BISC 220L	General Biology: Cell Biology and Physiology, or	
GEOL 305Lx	Introduction to Engineering Geology	4

MAJOR REQUIREMENTS**Engineering**

ENGR 102	Engineering Freshman Academy	2
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Civil and Environmental Engineering

CE 106	Design and Planning of Civil Engineering Systems, or	2
CE 110	Introduction to Environmental Engineering	3
CE 108	Introduction to Computer Methods in Civil Engineering	2

CE 205	Statics	2
CE 210L	Introduction to Environmental Engineering Microbiology	3
CE 225	Mechanics of Deformable Bodies	3
CE 309	Fluid Mechanics	3
CE 325	Dynamics	3
CE 334L	Mechanical Behavior of Materials	3
CE 358	Theory of Structure I	3
CE 408	Risk Analysis in Civil Engineering	3
CE 451	Water Resources Engineering	3
CE 453	Water Quality Control	3
CE 463L	Water Chemistry and Analysis	3
CE 467L	Geotechnical Engineering	4
CE 473	Engineering Law, Finance, and Ethics	3
CE 485	Wastewater Treatment Design	3
ENE 400	Environmental Engineering Principles	3
ENE 428	Air Pollution Fundamentals	3
ENE 429	Air Pollution Control	3

Aerospace and Mechanical Engineering

AME 310	Engineering Thermodynamics I	3
		60-61

MAJOR ELECTIVE	UNITS
Design kernel***	6
Total units:	129-130

*GE Category VI is taken concurrently with WRIT 140.

**Satisfies GE Category III requirement.

***Kernels must be selected from the following list of design courses: CE 465, CE 466, CE 476, CE 482, CE 484, ENE 486.

*The university allows engineering majors to replace the GE Category IV with a second course in Categories I, II or VI.

All curricula leading to a degree must be approved by the Astani Department of Civil and Environmental Engineering; please note this includes transfer credit and units for courses waived for subject credit only, which have been approved through the Degree Progress department.

Bachelor of Science in Environmental Engineering (131-134 Unit Program)

The program has two tracks: Track 1: Environmental Systems and Processes (131-132 units); Track II: Environmental Biotechnology (133-134 units). A cumulative grade point average of C (2.0) is required for all courses taken at USC as well as all upper division courses applied towards the major, regardless of the department in which the courses are taken. In addition, a minimum grade of C must be earned in each of the following courses: CE 205 and CE 309 or ENE 410. See also common requirements for undergraduate degrees section, page 569xx.

COMPOSITION/WRITING REQUIREMENT	UNITS
WRIT 140*	Writing and Critical Reasoning 4
WRIT 340	Advanced Writing 3

GENERAL EDUCATION (SEE PAGE 63XX)	UNITS
General education* +	20

PRE-MAJOR REQUIREMENTS (BOTH TRACKS)

Chemistry Requirement

CHEM 105aL	General Chemistry, or	4
CHEM 115aL	Advanced General Chemistry	4
CHEM 105bL	General Chemistry, or	4
CHEM 115bL	Advanced General Chemistry	4
CHEM 322aL	Organic Chemistry	4

Math Requirement

MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 226	Calculus III	4
MATH 245	Mathematics of Physics and Engineering I	4

Physics Requirement

PHYS 151L**	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4
		36

PRE-MAJOR REQUIREMENTS (TRACK II ONLY)

Chemistry Requirement	UNITS
CHEM 322bL	Organic Chemistry 4

MAJOR REQUIREMENTS (BOTH TRACKS)

Engineering	UNITS
ENGR 102	Engineering Freshman Academy 2

Civil and Environmental Engineering

CE 106	Design and Planning of Civil Engineering Systems, or Introduction to Environmental Engineering	2
CE 110	Introduction to Environmental Engineering	3
CE 108	Introduction to Computer Methods in Civil Engineering	2
CE 205	Statics	2
CE 210L	Introduction to Environmental Engineering Microbiology	3
CE 309	Fluid Mechanics, or	3
ENE 410	Environmental Fluid Mechanics	3
CE 408	Risk Analysis in Civil Engineering	3
CE 451	Water Resources Engineering	3
CE 453	Water Quality Control	3
CE 463L	Water Chemistry and Analysis	3
CE 465	Water Supply and Sewage System Design	3
CE 473	Engineering Law, Finance, and Ethics	3
CE 484	Water Treatment Design	3
CE 485	Waste Water Treatment Design	3
ENE 400	Introduction to Environmental Engineering Principles	3
ENE 428	Air Pollution Fundamentals	3
ENE 486	Design of Solid and Hazardous Waste Engineering Systems	3

Courses from Other Departments

CHE 330	Chemical Engineering Thermodynamics	4
GEOL 305Lx	Introduction to Engineering Geology	4
		55-56

MAJOR REQUIREMENTS (TRACK I ONLY)

Civil and Environmental Engineering	UNITS
ENE 429	Air Pollution Control 3

Courses from Other Departments

BISC 220L	General Biology: Cell Biology and Physiology	4
PTE 463L	Introduction to Transport Processes in Porous Media	3
		10

MAJOR REQUIREMENTS (TRACK II ONLY)

Civil and Environmental Engineering	UNITS
ENE 487	Environmental Biotechnology and Bioremediation 3

Courses from Other Departments

BISC 320L	Molecular Biology	4
BISC 330L	Biochemistry	4
		11

MAJOR ELECTIVES (TRACK I ONLY)

Design kernel***	3
Total (Track I):	131-132
Total (Track II):	133-134

*GE Category VI is taken concurrently with WRIT 140.

**Satisfies GE Category III requirement.

***Kernels must be selected from the following design courses: CE 443, CE 466, CE 476, or CHE 442.

*The university allows engineering majors to replace the GE Category IV with a second course in Categories I, II or VI.

Minor in Environmental Engineering

See listing on page 632xx.

Minor in Construction Planning and Management

This program covers the most current theories and practice of construction planning and management. The program provides a valuable adjunct credential to professional school students pursuing careers in business administration, public administration, architecture, environmental studies, and other areas; and a unique opportunity for professional focus to students in the USC Dornsife College of Letters, Arts and Sciences.

Construction activities are complex. In contemporary society, effective planning and management of these activities requires specialized knowledge of the technical, economic and policy environment. This program couples the knowledge of how construction activities are organized with a broader understanding of the urban system in which construction projects are embedded. With the exception of statistics, all of the required courses are within the Astani Department of Civil and Environmental Engineering and the USC Price School of Public Policy.

Any USC undergraduate who has completed the equivalent of two full-time semesters in good standing is eligible to pursue the minor program. This minor

program is rigorous enough to serve as an introductory credential for students subsequently electing to pursue advanced studies in development, urban planning, construction management, architecture or allied fields.

Courses Required

Seven courses consisting of at least 23 units are required for the minor.

Statistics

Students must complete an adviser approved course in statistics. Candidate courses include ECON 317, EE 364, ISE 220, MATH 208, PPD 303, PSYC 274L, SOCI 314 and similar courses. The statistics course must be at least three units.

CORE COURSES		UNITS
CE 460	Construction Engineering	3
CE 461	General Construction Estimating	3
CE 462	Construction Methods and Equipment, or	
CE 469	Sustainable Design and Construction, or	
CE 470	Building Information Modeling and Integrated Practice	3

Theme Requirement: Two courses, both from Theme 1 or Theme 2 or Theme 3

Theme 1

PPD 358	Urban and Regional Economics	4
PPD 362	Real Estate Fundamentals for Planning and Development	4

Theme 2

FBE 400X	Introduction to Real Estate Finance and Development	4
FBE 466	Management of Real Estate Development: Feasibility Studies	4

Theme 3

PPD 357*	Government and Business	4
PPD 435	Analyzing Real Estate Markets for Planning and Development	4
		17

ELECTIVES (SELECT ONE)		UNITS
CE 404	Business and Intellectual Property Law for Engineers	3
CE 412	Contracts and Specifications	3
PPD 437*	Advanced Finance and Investment for Planning and Development	4

*Prerequisite required.

Advisement is provided by the Astani Department of Civil and Environmental Engineering. Students will normally complete statistics before enrolling in CE 461 but can be permitted to complete statistics as a corequisite subject to adviser approval. Students are advised to take CE 460 and CE 461 before taking CE 462. Students electing PPD 437 must have completed PPD 362.

Minor in Engineering Technology

Commercialization

See listing under the Special Educational Opportunities section, page 586xx.

Master of Science in Civil Engineering

The Master of Science in civil engineering is awarded in strict conformity with the general requirements of the USC Viterbi School of Engineering. A student may receive the Master of Science in civil engineering with a special option by specializing in one of the following courses of study: construction engineering; structural engineering; and transportation engineering. Students specializing in the transportation option and completing a thesis must include in their program 4 units of CE 594ab.

A general Master of Science in civil engineering without special designation is also given. Students pursuing this program will choose between the following special options: general, earthquake engineering, structural mechanics, water resources or ocean and coastal engineering.

A student who wishes to pursue the Master of Science in civil engineering without special designation and who has an interest in public works may take a selected sequence of 12 units in the USC Price School of Public Policy. For further information, see the Public Administration Professional Sequence section in the USC Price School of Public Policy, page 903xx.

Master of Science in Civil Engineering (Transportation Systems)

See Sustainable Infrastructure Systems, page 680xx.

Master of Science in Civil Engineering (Water and Waste Management)

See Sustainable Infrastructure Systems, page 680xx.

Master of Science in Environmental Engineering

Students with a bachelor's degree in engineering or science may work toward the Master of Science in environmental engineering. Students with degrees in fields other than engineering or science may be admitted on the recommendation of a program adviser and program director. Selection of courses will be determined through consultation with a program adviser to provide a maximum of training in the student's area of interest in environmental problems.

Master of Construction Management

Students possessing a bachelor's degree and with sufficient training in capital management and statistics may pursue the Master of Construction Management. The purpose of the Master of Construction Management program is to educate and train multidisciplinary professionals to understand and execute the broad array of technical and non-technical activities associated with construction management. The program provides special attention to the function of the constructor in real estate development. The program is drawn from the M.S., Civil Engineering program in construction engineering and management, and from the USC Marshall School of Business.

Applicants to the program are expected to have completed undergraduate course work in engineering economy or business finance.

CORE CURRICULUM		UNITS
ARCH 511L	Seminar: Building Systems	4
CE 501	Functions of the Constructor	3
CE 502	Construction Accounting and Finance, or	3
ACCT 509	Concepts of Financial and Management Accounting, or	4
ISE 566	Financial Accounting Analysis for Engineering	3
CE 556	Project Controls — Budgeting and Estimating	3
CE 566	Project Controls — Planning and Scheduling	3

TRACK REQUIREMENT: TWO COURSES, BOTH FROM TRACK 1, TRACK 2, OR TRACK 3

TRACK 1: Finance Track		UNITS
FBE 400X*	Introduction to Real Estate Finance and Development	4
FBE 489	Real Estate Capital Markets	4
FBE 570*	Advanced Topics in Real Estate Finance	3
FBE 589*	Mortgages and Mortgage-Backed Securities and Markets	3
FBE 591*	Real Estate Finance and Investment	3

Track 2: Real Estate Development Track

FBE 466*	Management of Real Estate Development: Feasibility Studies	4
FBE 470*	Advanced Real Estate Analysis	4
FBE 565	Economics of Urban Land Use: Feasibility Studies	3
FBE 566	Real Estate Finance, Investments and Development	3

Track 3: Architecture, Engineering and Construction (AEC) Technology Track

CE 470	Building Information Modeling and Integrated Practice	3
CE 469	Sustainable Design and Construction, or	
CE 570	Building Information Modeling for Collaborative Construction	3

Additional adviser-approved technical and advanced electives	10-11
Total minimum units	33

*Prerequisite required.

The minimum requirement for the Master of Construction Management degree is 33 units. At least three elective courses totaling at least 9 units are required for this degree. These may be taken from the USC Astani Department of Civil and Environmental Engineering, other engineering departments, the USC Price School of Public Policy, the USC School of Architecture, the USC Davis School of Gerontology, the USC Gould School of Law or the USC Marshall School of Business subject to adviser approval. Admission to some classes requires advanced prerequisites and is subject to availability and approval of the instructor.

General Requirements

Residence and Course Load

The normal time required for earning the Master of Construction Management is three semesters, including one summer semester beginning in June and continuing through the spring semester ending in May. Students are expected to participate in extracurricular activities associated with the Master of Construction Management program, including the speaker series and field trips. A candidate must complete the last four semester units of course work at USC.

Students who wish to take a leave of absence for a semester or longer must request it from the chairman of the Astani Department in writing. Such leaves may be granted for up to one year.

Engineer in Civil Engineering

Requirements for the Engineer in civil engineering are the same as set forth in the general requirements.

Doctor of Philosophy in Civil Engineering and Doctor of Philosophy in Engineering (Environmental Engineering)

The Doctor of Philosophy with a major in civil engineering and the Doctor of Philosophy with a major in engineering (environmental engineering) are also offered. See general requirements for graduate degrees, page 572xx.

Areas of specialization for Doctor of Philosophy level students are: structural engineering, structural mechanics, earthquake engineering, coastal engineering, water resources engineering, construction engineering and management, soil mechanics and foundation engineering, hydrology, hydrodynamics and transportation.

Graduate Certificate in Engineering Technology Commercialization

See listing under the Special Educational Opportunities section, page 586xx.

Graduate Certificate in Transportation Systems

The graduate certificate in Transportation Systems is an interdisciplinary program administered by the USC Astani Department of Civil and Environmental Engineering. The certificate program allows students to specialize in transportation applications, while simultaneously receiving a degree in their home department. The certificate in transportation systems combines elements of transportation engineering with transportation policy, planning and project management. The program is especially appropriate for students intending to pursue careers as developers of transportation technologies, or as implementors of technologies within government agencies.

Students electing the certificate program apply to the USC Astani Department of Civil and Environmental Engineering. Course prerequisites for the program are:

- one course in statistics or uncertainty, equivalent to ISE 225, PPD 404x or CE 408;
- one course in engineering economy, equivalent to ISE 460;
- one course in microeconomics, equivalent to ECON 203; and
- one course in a contemporary high level programming language.

These prerequisites may be satisfied after enrollment in the certificate program by taking the indicated courses or their equivalent. Graduate students cannot receive credit for courses numbered below 400. Detailed admissions requirements are published by the USC Astani Department of Civil and Environmental Engineering.

The courses taken for the certificate may be applied later to the Master of Science in Civil Engineering, transportation option.

Qualified students holding a bachelor's degree also have the option of enrolling in the certificate program without receiving a separate graduate degree.

The curriculum consists of five graduate courses for a total of 17 units.

CERTIFICATE REQUIREMENTS		UNITS
CE 471	Principles of Transportation Engineering, or	3
CE 519	Transportation Engineering	
CE 583	Design of Transportation Facilities, or	
CE 585	Traffic Engineering and Control	3
ISE 515	Engineering Project Management	3
PPD 633	Urban Transportation Planning and Management	4
PPD 634	Institutional and Policy Issues in Transportation	4

Courses of Instruction

CIVIL ENGINEERING (CE)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

CE 106 Design and Planning of Civil Engineering Systems (2, Fa) History of civil engineering; introduction to the synthesis and design of systems dependent upon civil engineering technology; the structuring, modeling, and simulation of such systems.

CE 107 Introduction to Civil Engineering Graphics (3, Sp) Graphic communication and drawing; use of instruments, lettering, dimensioning, and detailing of engineering drawing; free-hand sketching, drafting, and modeling.

CE 108 Introduction to Computer Methods in Civil Engineering (2, Sp) Computer programming, organization of problems for computational solution, flow charts, programming; numerical methods; analysis and solution of civil engineering problems.

CE 110 Introduction to Environmental Engineering (3, Fa) Basic concepts of environmental engineering. Air, water, and soil pollution control technologies; pollution prevention strategies. Design of simple water distribution and treatment systems.

CE 205 Statics (2, FaSp) Statics of particles and rigid bodies; equivalent force systems; distributed forces; applications to trusses, frames, machines, beams, and cables; friction; moments of inertia. *Prerequisite:* PHYS 151L.

CE 207L Introduction to Design of Structural Systems (2, Sp) Structural materials, components and systems; gravity and lateral forces; structural performance and failures; introduction to structural plans and analysis; computer applications, case studies, design project. *Prerequisite:* CE 205; *corequisite:* CE 107 and CE 225.

CE 210L Introduction to Environmental Engineering Microbiology (3, Fa) Principles of environmental microbiology; waterborne pathogens; microorganisms and air pollution; microorganisms in soil; water pollution microbiology; biodegradation of hazardous chemicals; eutrophication. *Corequisite:* CHEM 105aL or CHEM 115aL; *recommended preparation:* CE 106 or CE 110.

CE 225 Mechanics of Deformable Bodies (3, Sp) Analysis of stress and strain; axial, flexural, and torsional behavior of slender bars; elastic deflections; combined stresses; introduction to elastic stability and energy methods. *Prerequisite:* CE 205.

CE 309 Fluid Mechanics (3, Fa) Fluid statics; relative velocity field; total acceleration; divergence theorem; conservation of mass, energy, and momentum applied to engineering problems in laminar and turbulent flow. *Prerequisite:* MATH 226; *corequisite:* CE 325.

CE 325 Dynamics (3, Sp) Elements of vector algebra; dynamics of particles, systems of particles and rigid bodies; kinematics; momentum relations, energy methods; vibrations; Euler's equations of motion. *Prerequisite:* CE 205.

CE 334L Mechanical Behavior of Materials (3, Fa) Measurement of stress and strain; tensile, impact, creep, and fatigue behavior; statistical methods, brittle fracture; properties of structural materials. *Prerequisite:* CE 225 or AME 204.

CE 358 Theory of Structures I (3, Fa) Deformations and deflections of elastic systems; statically indeterminate beams, arches, and frames; secondary stresses. *Prerequisite:* CE 225.

CE 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

CE 402 Computer Methods in Engineering (3, Sp) Fundamentals of analog and digital computers; simulation of nonlinear physical systems; numerical analysis and solution of engineering problems. *Prerequisite:* CE 108 and MATH 245.

CE 404 Business and Intellectual Property Law for Engineers (3, Fa) An examination of legal issues confronting the professional engineer. Topics include the legal system, contracts, risk management, forms of doing business, capital formation and intellectual property rights. Upper division standing.

CE 408 Risk Analysis in Civil Engineering (3, Fa) Realization of nondeterministic problems in civil engineering; quantitative analysis of structural and system reliability; optimal design and design with specified risk. *Prerequisite:* CE 225, MATH 226.

CE 409aBL Computer-Aided Design (3-3) Applications of interactive computer graphics to design problems; automated drafting; 3-D graphic algorithms. Analysis of design process from information processing viewpoint. *Prerequisite:* CE 225.

CE 412 Construction Law and the Property Development Process (3, Sp) Legal aspects of property development and construction: land use, construction practices and specifications, architecture and engineering contracts, agency, subcontracting, professional registration, liability, insurance, liens, and bonds. *Recommended preparation:* CE 404 or a general business law course.

CE 428 Mechanics of Materials (3) Analysis of stress and deformation; equations of elasticity; bending of beams; elastic instability; torsion problems; introduction to plates and shells; elastic wave propagation; numerical methods. *Prerequisite:* CE 225.

CE 443 Environmental Chemistry (3, Fa) Chemistry of water, gas, liquid and solid wastes. Chemical principles applicable to environmental engineering. *Prerequisite:* CHEM 105bL or CHEM 115bL.

CE 451 Water Resources Engineering (3, Sp) Discussion of broad perspectives on control and utilization of water, quantitative hydrology, ground water, probability concept, economic study, hydraulic structures, multi-purpose water resources projects. *Prerequisite:* CE 309 or ENE 410.

CE 453 Water Quality Control (3, Fa) Water quality criteria and fundamental of acceptability. Natural purification of surface waters. Processes employed in the treatment of waste waters for disposal or re-use. *Prerequisite:* CHEM 105aL or CHEM 115aL; *corequisite:* CE 309 or ENE 410.

CE 456 Design of Steel Structures (3, Fa) Fundamentals of analysis and design of steel structures; structural elements; simple and eccentric connections; design project. *Prerequisite:* CE 207L, CE 225; *corequisite:* CE 358.

CE 457 Reinforced Concrete Design (3, Sp) Strength and deformation of reinforced concrete; beams in flexure and shear; bond and development of bars; deflections; columns; slabs; footings; introduction to prestressed concrete. *Prerequisite:* CE 207L, CE 225; *corequisite:* CE 358.

CE 458 Theory of Structures II (3, Sp) Matrix algebra; stiffness method; force method; computer analysis of planar structures. *Prerequisite:* CE 108 and CE 358 or AME 150L and AME 353.

CE 459 Introduction to Structural Dynamics (3, Fa) Response of single and multiple degree of freedom systems to dynamic excitation; structural modeling and approximate solutions; introduction to earthquake resistant design. *Corequisite:* CE 458.

CE 460 Construction Engineering (3, FaSp) Introduction to the construction processes; estimating and bidding, construction administration, planning and scheduling, equipment and methods, labor relations, cost control systems, and safety.

CE 461 General Construction Estimating (3, Fa) Theory of estimating. Quantity surveying; unit cost synthesis and analysis. Bid organization and preparation; competitive simulations and exercises.

CE 462 Construction Methods and Equipment (3, Sp) Current procedures in selected fields of construction; organization and planning; equipment economics; machinery.

CE 463L Water Chemistry and Analysis (3, Sp) Chemistry of water purification technology and water pollution control. Chemical processes in natural and engineering aquatic environments; physical/chemical and biological characterization of water and wastewater. *Prerequisite:* CE 453, CHEM 105b or CHEM 115bL.

CE 464 Geotechnical Engineering (3) Fundamentals of soil mechanics and foundation engineering; soil classification, seepage, stress-strain behavior, shear strength, consolidation, design of retaining structures and foundations, and slope stability.

CE 465 Water Supply and Sewerage System Design (3, Sp) Design of water supply systems, storm drains, sanitary sewers, and lift stations. *Prerequisite:* CE 453.

CE 466 Design of Free-Surface Hydraulic Systems (3, Sp) Hydrological and hydraulic design for uniform and non-uniform flows, channel transition, sedimentation controls, design discharge for tributary watersheds, flood routing, flood detention, computer aided design. *Prerequisite:* CE 309.

CE 467L Geotechnical Engineering (4, Sp) Fundamentals of geotechnical engineering; soil classification, seepage, stress-strain behavior, shear strength, consolidation, design of retaining structures and foundations, and slope stability. Soil testing. (Duplicates credit in CE 464.) *Prerequisite:* CE 225.

CE 469 Sustainable Design and Construction (3, FaSp) Leadership in Energy and Environmental Design (LEED); Green Building strategies; Carbon Footprinting; calculating the embodied energy of building materials; cyclical processes in design and construction.

CE 470 Building Information Modeling and Integrated Practice (3, Fa) Building Information Modeling, current BIM technologies; coordination of design and construction; information management throughout building lifecycle; project delivery systems and technologies for integrated practice.

CE 471 Principles of Transportation Engineering (3, Fa) Planning, design, construction, maintenance, and operation of facilities for air, water, rail, and highway transit systems. Junior or senior standing.

CE 473 Engineering Law, Finance and Ethics (3, Fa) An examination of the legal, financial and ethical issues regularly considered by all practicing engineers. Upper division standing.

CE 476 Design of Pressurized Hydraulic Systems (3, Sp) Application of hydraulic principles to the engineering design of hydraulic structure with pressurized flow, piping network, water hammer, surge suppression, pumps and turbines, manifold hydraulic design. *Prerequisite:* CE 309.

CE 477 Civil Infrastructure Information Systems (3) Information systems and their use in the planning, design, construction, and operation of civil infrastructure projects. Project management and knowledge management for infrastructure systems development. *Prerequisite:* CSCI 201, CE 402.

CE 478 Timber and Masonry Design (3, Fa) Characteristics and properties of wood; beams, columns, trusses, connectors, and diaphragms. Properties of masonry, working stress and strength design, seismic design requirements.

CE 480 Structural Systems Design (3, Sp) Evaluate, design and analyze buildings. Organize and perform calculations for vertical loads, wind loads, and seismic loads on building projects. *Prerequisite:* CE 456 or CE 457 or CE 478; CE 358, CE 467L, CE 473, CE 482.

CE 482 Foundation Design (3, Fa) Analysis and design principles of building foundations, including spread footings, piles, drilled shafts, sheetpile walls and retaining structures. *Prerequisite:* CE 467.

CE 484 Water Treatment Design (3, Fa) Predesign studies, precipitation softening, coagulation and flocculation, sedimentation, filtration, sludge handling, chlorination, chloramination, ozonation; plant hydraulics, flow measurement, pumps, instrumentation and control, tertiary treatment. *Prerequisite:* CE 451 and CE 463L.

CE 485 Wastewater Treatment Design (3, Sp) Process kinetics, mass balance, reactor design, pretreatment, clarification, chemical treatment, biological treatment (aerobic and anaerobic), disinfection, sludge treatment, nitrogen and phosphorus removal, carbon adsorption. *Prerequisite:* CE 451, CE 463L, CE 473.

CE 490x Directed Research (1-8, max 12) Individual research and readings. Not available for graduate credit.

CE 495 Seminars in Civil Engineering (1, FaSp) Information necessary for successful transition to engineering practice with emphasis on substantive engineering topics, employee rights and responsibilities, communication skills, ethic and lifelong learning. Graded CR/NC. Open only to upper division engineering majors.

CE 499 Special Topics (2-4, max 8) Course content to be selected each semester from recent developments in civil engineering and related fields.

CE 501 Functions of the Constructor (3, Fa) Systems, processes, and constraints governing the initiation, direction, engineering, and delivery of major construction projects. Professional construction management, responsibilities, and practice.

CE 502 Construction Accounting and Finance (3, Fa) Cost control, finance, and engineering economy for construction operations.

CE 503 Microbiology for Environmental Engineers (3) Basic microbiology of water, air, and soil. Application of microbiology to the practice of environmental pollution control.

CE 504 Solid Waste Management (3) Characterization, production, storage, collection, and transport of solid wastes; alternative disposal methods; design principles and environmental impact; management of radiological solid wastes.

CE 506 Heavy Construction Estimating (3, Fa) Methods engineering, work analysis and pricing for route construction. Grading, draining, paving, haul economy, plant-materials production, pipeline and bridge building.

CE 507 Mechanics of Solids I (3, Fa) Analysis of stress and strain; constitutive equations for elastic materials; plane stress and strain; torsion; introduction to plates and shells; energy methods.

CE 508 Mechanics of Solids II (3) Thermal stresses; introduction to elastic stability; yield criteria; constitutive equations for elastoplastic materials; elastoplastic stress analysis; viscoelasticity and creep. *Prerequisite:* CE 507 or CE 428.

CE 509 Mechanics of Solids III (3) Advanced topics in mechanics of solids; complex variable methods for plane problems; three-dimensional problems; introduction to fracture mechanics. *Prerequisite:* CE 507.

CE 510 Groundwater Management (3) Groundwater hydrology, aquifer testing technology, groundwater quality and contamination, geophysical method, well design and development, basin water balance, computer modeling, legal aspects, groundwater management system.

CE 511 Flood Control Hydrology (3) Flood frequency, storm characteristics, net rain; surface drainage, peak discharge, flood runoff.

CE 513L Instrumental Methods for Environmental Analysis (3) Advanced techniques in gas, water, liquid, and solid waste analysis; theoretical and experimental consideration of electrometric, photometric, manometric, and chromatographic techniques for measurements of environmental pollution. Lecture, 2 hours; laboratory, 3 hours. *Prerequisite:* CE 463L.

CE 514ab Advanced Sanitary Engineering Design (3-3) Design of water and waste treatment works. *Prerequisite:* CE 453.

CE 515 Sustainable Infrastructure Systems (3) Explores broad issues and mitigation measures involved in the analysis and design of complex, uncertain, interacting infrastructure systems needing to be resilient and sustainable.

CE 516 Geohydrology (3) Principles of groundwater motion; aquifer characteristics, prospecting, practical engineering problems, well design, maintenance and rehabilitation; hydrodynamic dispersion, field testing essentials and procedures, groundwater quality, artificial recharge.

CE 517 Industrial and Hazardous Waste Treatment and Disposal (3, 2 years, Sm) Physical, chemical, and biological treatment processes for industrial and hazardous wastes; pretreatment systems, biodegradation of toxic chemicals; groundwater and soil decontamination; biofilters for air decontamination. *Prerequisite:* CE 463L.

CE 518 Carbon Capture and Sequestration (3) The needs for carbon capture and sequestration (CCS) and systematic introduction to CCS technologies. Main topics include: introduction to global change, world energy consumption, greenhouse gases control, carbon capture and separation, and carbon sequestration.

CE 519 Transportation Engineering (3) Principles of analysis and planning. Characteristics of transportation systems. Urban and regional systems. Relationship between environment and transportation systems. Estimating the impact of decisions.

CE 520ab Ocean and Coastal Engineering (3-3) Linear and nonlinear wave theories with engineering applications; wind waves; wave spectra; wave interactions with marine structures; ship mooring, harbor resonance; sediment transport; diffusion processes. *Prerequisite:* a: CE 309 or ENE 410.

CE 522 Groundwater Hydrologic Modeling (3) Simulation of groundwater hydrologic processes through mathematical, analog, and physical models.

CE 523 Process Kinetics and Dynamics in Environmental Engineering (3) Concepts and application of processes that affect water quality in natural and engineered systems. Major processes include: flocculation, sedimentation, filtration, oxidation, adsorption and membrane processes. *Prerequisite:* CE 453 or CE 463L.

CE 525 Engineering Mathematical Analysis (3, Sp) Engineering problems discussed on a physical basis with solutions via mathematical tools: Vector analysis; functions of complex variables, infinite series, residues and conformal mappings. (Duplicates credit in the former CE 525a.)

CE 526 Engineering Mathematical Methods (3) Engineering problems discussed on a physical basis with solutions via mathematical tools: Fourier series; Fourier and Laplace transforms; partial differential equations, wave and Laplace equations. (Duplicates credit in the former CE 525b.) *Recommended preparation:* undergraduate multivariable calculus and ordinary differential equations.

CE 528 Seismic Analysis and Design of Reinforced Concrete Bridges (3, Sp) Fundamental concepts, methods and current codes used in the analysis and design of reinforced concrete bridge structures. Experimental and earthquake observations of bridge performance. *Prerequisite:* CE 457; *recommended preparation:* CE 538.

CE 529ab Finite Element Analysis (a: 3, Fa; b: 3, Sp) Basic concepts; stiffness method; variational methods; displacement method; isoparametric formulation; plane stress and strain; plates and shells; dynamics; stability; nonlinear analysis, heat transfer; computer applications.

CE 530 Nonlinear Mechanics (3) Nonlinear problems in structural dynamics; elastic-plastic response; approximate methods of nonlinear analysis; stability theory; stability of periodic nonlinear oscillations; Liapounov's method; nonlinear buckling problems.

CE 531 Soil Mechanics (3) Soil formation; clay mineralogy; steady state seepage; mechanical coupling between interstitial water and soil skeleton; experimental soil behavior and its modeling with constitutive equations. *Prerequisite:* CE 464.

CE 532 Principles of Foundation Engineering (3) Fundamental methods in foundation engineering; plastic collapse, limit equilibrium, bearing capacity, slope stability; soil-structure interaction; application of numerical methods, finite differences and finite elements. *Prerequisite:* CE 464.

CE 533 Geotechnical Earthquake Engineering (3) Provides a design-oriented understanding of the "state-of-the-practice" of soil mechanics and foundation engineering aspects of earthquake engineering.

CE 534 Design of Earth Structures (3) Designed to provide a thorough understanding of the analytical and design principles underlying the construction of a broad range of earth structures.

CE 535ab Earthquake Engineering (a: 3, Fa; b: 3, Sp) Fundamentals of earthquake engineering; characteristics of earthquakes; seismicity; response of linear and nonlinear multidegree systems; basic concepts in earthquake-resistant design; foundation problems.

CE 536 Structural Design for Dynamic Loads (3) Earthquake resistant design criteria with application to steel reinforced concrete and timber structures. Design of blast resistant structures and structures subject to impact loads. *Prerequisite:* CE 459 or CE 541a.

CE 537 Advanced Reinforced Concrete (3, Fa) Behavior of reinforced concrete members in terms of strength and deformation; relationship between behavior and building code requirements.

CE 538 Prestressed Concrete (3, Sp) Fundamental principles of prestressing by pre- and post-tensioning; elastic and time dependent losses; stress analysis and design of prestressed and precast concrete structures.

CE 539 Advanced Steel Structures (3, Sp) Design of tubular members and plate girders; design for torsional and seismic loads; general flexural theory; introduction to plastic design; connections.

CE 540 Limit Analysis of Structures (3) Plastic analysis and design of frames. Fundamental theorems of plastic analysis; general methods of plastic analysis, design requirements, minimum weight design theorems and applications, shakedown theorems.

CE 541ab Dynamics of Structures (a: 3, Fa; b: 3, Sp)
a: Forced vibrations of discrete MDOF systems; modal analysis; energy methods; analytical dynamics; vibration of continuous systems; wave propagation; computational techniques; application of commercial software tools. *b:* Continuous system responses; approximate methods; introduction to structural control; random vibration concepts; response of continuous systems to random excitation; nonlinear systems (geometric theory), (approximate methods). *Prerequisite:* CE 541a.

CE 542 Theory of Plates (3) Theory of plate bending; rectangular and circular plates; anisotropic plates; energy methods; numerical methods; large deformations; sandwich plates. *Prerequisite:* CE 428 or CE 507.

CE 543 Stability of Structures (3) Critical loads of columns, beams, thin-wall bars, plates, shells; stability of frames and trusses; effect of inelastic behavior of materials; effect of dynamic loading.

CE 544 Theory of Shell Structures (3) General bending theory of shells; membrane theory; shells of revolution; numerical methods; dynamic response. *Prerequisite:* CE 428 or CE 507.

CE 545ab Advanced Finite Element Method in Structural and Continuum Mechanics (3-3) *a:* Finite elements in nonlinear mechanics, elasticity, plasticity, viscoelasticity; advanced finite element applications in fracture mechanics, heat transfer, fluid mechanics; computational implementation of finite element method. *Prerequisite:* CE 529a. *b:* Mathematical aspects of the finite element method; correctness of discretizations for elliptic, parabolic, and hyperbolic equations; accuracy and convergence considerations; stability of time dependent algorithms. *Prerequisite:* CE 545a.

CE 546 Structural Mechanics of Composite Materials (3) Applications and manufacturing of composites: anisotropic materials; laminated composite plates and shells; buckling and dynamics; strength and failure; interlaminar stresses; delamination; thermal properties; design considerations.

CE 549 Building Design Project (3, Sp) Integrated design project following design office procedures. A building will be designed in detail using the team approach. Capstone for M.Eng. in Structural Design. *Prerequisite:* CE 459 or CE 541a, CE 458 or CE 529a, CE 537; *corequisite:* CE 539.

CE 550 Computer-Aided Engineering (3) Basic concepts of computer-aided engineering. Modeling; simulation; visualization; optimization; artificial intelligence; manufacturing; information management. Organization and management of computer-aided engineering projects.

CE 551 Computer-Aided Engineering Project (3) Computer-aided engineering in a project environment. Responding to RFPs; conceptual design; preliminary analysis; overall and detailed analysis and design; trade-off studies; project management; project presentation.

CE 552 Managing and Financing Public Engineering Works (3, FaSpSm) Tools for improving the efficiency and effectiveness of public engineering works, taking into account the political and policy context. Graduate standing. *Recommended preparation:* microeconomic theory.

CE 553 Chemical and Biological Processes in Environmental Engineering (3) Chemistry of softening, coagulation, disinfection, oxidation, corrosion control, dry and wet combustion and ion exchange; aerobic and anaerobic processes and the ecology of liquid and solid waste treatment. *Prerequisite:* CE 453.

CE 554 Risk and Reliability Analysis for Civil Infrastructure Systems (3, Sp) Elements of feasibility, reliability, and risk analysis of civil infrastructure systems, simulation, optimization, life-cycle cost, evaluation and decision making.

CE 555 Underwater Structures (3) Loads on underwater structures; stress analysis of typical structural elements; buckling problems; dynamic response. *Prerequisite:* CE 507.

CE 556 Project Controls — Budgeting and Estimating (3, FaSp) Fundamental principles and practices of cost estimating, budgeting, and cost control of construction projects. Case studies and software exercises based on project data. (Duplicates credit in the former CE 556a.) Open only to graduate students in engineering, architecture, business, or urban and regional planning.

CE 557 Advanced Building Estimating (3, Sp) Processes in compiling a bid for construction of non-residential building.

CE 558 International Construction and Engineering (3, Sp) Business development and project management in international markets. Topics include marketing, planning, contracts and negotiations, procurement, logistics, personnel and financing. Construction operations in adverse environments. Graduate standing in engineering, architecture, business, or urban planning required.

CE 559 Strategic Planning in Construction Engineering (3, Sp) Elements and techniques of strategic planning for construction engineering. Fundamentals of engineering as a service sector enterprise. Assessment of markets (including international issues), competitors, and technology. Aspects of overseas engineering business. Management of technology and the role of R&D. Emphasis on concepts. *Recommended preparation:* CE 502.

CE 560 Simulation of Civil Infrastructure Systems Performance (3) Time/space and frequency/wave number domain analysis, spectral representation of wind, earthquake and other natural loads, FEM techniques for system response simulation.

CE 561 Uncertainty Quantification (3) Methods of quantifying uncertainty in civil engineering and related fields. Basic uncertainty modeling; advanced topics such as reliability analysis, Bayesian updating, random processes, random fields.

CE 562ab Hydromechanics (3-3) Analytical solution of civil engineering problems concerned with hydraulic flow; water hammer, free-surface flow, waves and seepage flow; application of theory to research and design.

CE 563 Chemistry and Biology of Natural Waters (3) Chemical and biological limnology; cycles of carbon, nitrogen, phosphorous, sulfur, and other biologically-mediated chemical transformations; effect of pollution on biology and chemistry of natural waters. *Prerequisite:* CE 443 and CE 453.

CE 564 Methods for Assessment and Protection of Environmental Quality (3) Natural ecosystems, technologies for control and remediation of air, water, and soil pollution; natural hazards and urban lifeline systems; Design For The Environment (DFE).

CE 565 Wave Propagation in Solids (3) Elastic waves in infinite and semi-infinite regions; plates and bars; steady-state and transient scattering; dynamic stress concentration; viscoelastic and plastic bodies.

CE 566 Project Controls — Planning and Scheduling (3, FaSp) Fundamental principles and practices of planning, CPM scheduling, and resource management. Development of project schedules using CPM theory applied to current and emerging software applications. (Duplicates credit in the former CE 556b.) Open only to graduate students in engineering, architecture, business, or urban and regional planning. *Recommended preparation:* CE 556.

CE 567 Smart Infrastructures (3) Examination of smart infrastructures relating to energy, water, waste and transportation drawing from the fields of engineering, sustainability, communications, sociology, and psychology.

CE 570 Building Information Modeling for Collaborative Construction (3, Sp) Multidisciplinary and geographically distributed virtual project teams used to simulate engineering and construction problems for projects selected in collaboration with industry partners. Open only to Master's and Doctoral students. *Prerequisite:* CE 470; *recommended preparation:* CE 556, CE 566.

CE 571 Nuclear Safety and Security: Human Performance and Safety Culture (3) Provides an overview of human-systems integration considerations, human performance and safety culture in the nuclear power operations.

CE 572 Construction Labor Management (2) Unionism in construction. Craft tradition, objectives, regulation, motivation, labor force economics, productivity, and technical change. Hiring systems, supervision of project labor operations, jurisdictional administration.

CE 579 Introduction to Transportation Planning Law (3) Federal and state statutory and regulatory requirements affecting California transportation systems, including transportation planning and funding law; and government contracting, environmental, and civil rights requirements.

CE 580 Law and Finance for Engineering Innovation (3) (Enroll in ISE 565)

CE 581 Negotiation For Engineering Management (3, Sp) (Enroll in ISE 581)

CE 583 Design of Transportation Facilities (3) Planning, design, staging, construction, test, and maintenance of the public works and facilities for land, water, and air transportation. *Prerequisite:* CE 519, CE 457.

CE 585 Traffic Engineering and Control (3, Sp) Conceptual engineering geometric design, installation, and calibration of vehicular storage and traffic controls; safe flow optimization of vehicles on various thoroughfares. *Recommended preparation:* CE 471.

CE 586x Management for Engineers (4) (Enroll in AME 589x)

CE 587 Transportation Energy Analysis (3) Energy consumption and socioeconomic impacts of past, present, and future transportation systems; analysis of alternatives between energy-intensive and low-cost transportation modes.

CE 588 Railroad Engineering (3) Railroad infrastructure including passenger and freight operations, track alignment (horizontal and vertical) design, basic components and terminology used in rail design and an understanding of this mode of transportation. *Recommended preparation:* CE 471.

CE 589 Port Engineering: Planning and Operations (3, Fa) Physical and operational characteristics of marine ports; impact analysis of modern logistics on port operation, planning and management; optimization and efficiency solutions for container terminals.

CE 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

CE 594abz Master's Thesis (2-2-0) Credit on acceptance of thesis. Graded IP/CR/NC.

CE 599 Special Topics (2-4, max 9) Course content will be selected each semester to reflect current trends and developments in the field of civil engineering.

CE 611 Stochastic Modeling and Simulation (3) Stochastic methods for modeling and simulating physical, chemical and biological processes. Topics include: Stochastic partial differential equations, Monte Carlo simulations, moment equation methods, stochastic expansions. Open only to graduate students.

CE 633 Urban Transportation Planning and Management (4, 2 years, Fa) (Enroll in PPD 633)

CE 634 Institutional and Policy Issues in Transportation (4, Sp) (Enroll in PPD 634)

CE 640 Advanced Theory of Elasticity (3) Curvilinear tensors; equations of nonlinear elasticity; elementary solutions; small deformations superimposed on large deformations; bifurcation of equilibrium states; nonlinear shell theory. *Prerequisite:* CE 507.

CE 645 Uncertainty Modeling and Stochastic Optimization (3) Introduction to the mathematical foundations, numerical algorithms, and computational tools necessary for solving problems of optimization under uncertainty. Open only to graduate students.

CE 647 Multiscale Methods in Mechanics (3) Behavior of man-made and natural materials at different scales; experimental methods to characterize behavior; governing equations, interscale coupling, information exchange; probabilistic representations; error analysis. Open only to master's, doctoral, and professional students. *Prerequisite:* AME 525 or AME 526 or CE 525b.

CE 690 Directed Research (1-4, max 8) Laboratory study of specific problems by candidates for the degree Engineer in Civil Engineering. Graded CR/NC.

CE 692 Transportation and the Environment (4) (Enroll in PPD 692)

CE 694abz Thesis (2-2-0) Required for the degree Engineer in Civil Engineering. Credit on acceptance of thesis. Graded IP/CR/NC.

CE 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

CE 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC.

Environmental Engineering — Sonny Astani Department of Civil and Environmental Engineering

Kaprielian Hall 210
(213) 740-0603
FAX: (213) 744-1426
Email: cedept@usc.edu
usc.edu/cee

Director: Lucio Soibelman, Ph.D.
Associate Director: Massoud Pirbazari, Ph.D.

Faculty

Fred Champion Professor of Civil and Environmental Engineering: Constantinos Sioutas, Sc.D.

Professors: Ronald C. Henry, Ph.D. (Civil Engineering); Jiin-Jen Lee, Ph.D., P.E. (Civil Engineering)*; James Moffett, Ph.D. (Marine Environmental Biology);

Massoud Pirbazari, Ph.D. (Civil Engineering); Lucio Soibelman, Ph.D. (Civil Engineering)

Research Assistant Professor: Scott Fruin, Ph.D. (Environmental Health, Keck School of Medicine)

Emeritus Professors: Joseph S. Devinny, Ph.D. (Civil Engineering); George V. Chilingar, Ph.D.

*Recipient of university-wide or school teaching award.

Degree Requirements

Educational Program Objectives

Environmental engineers are the technical professionals who identify and mitigate environment damage.

Environmental engineers provide safe drinking water, treat and properly dispose of wastes, maintain air quality, control water pollution and remediate sites contaminated by spills of hazardous substances. They monitor the quality of the air, water and land and develop improved means to protect the environment.

The undergraduate programs in environmental engineering have the following objectives:

(1) Professional Achievement

Graduates will be successful in their chosen field of engineering, compete effectively as problem solvers in a world of technological change, and become leaders in industry, academic or governmental institutions.

(2) Societal Impact

Graduates will make use of their knowledge of global and societal issues, environmental considerations and sustainability objectives to create a safe and healthy world.

(3) Organizational and Team-building Skills

Graduates will use their organizational abilities, communication skills and strengths in collaborative teamwork to foster a productive and efficient work environment in the organizations with which they are associated.

(4) Professional Development

Graduates will uphold high ethical and professional standards, be active in professional engineering organizations, support the advancement of the practice of engineering and obtain professional licensure.

(5) Continuing Education

Graduates will engage in lifelong learning, and be prepared to pursue graduate studies in engineering or other diverse fields such as business, law or medicine.

Bachelor of Science in Environmental Engineering

See listing on page 624xx, Civil Engineering.

Minor in Environmental Engineering

A minor in environmental engineering provides students with a basic knowledge of our environment, potential causes for its deterioration, methods to prevent or mitigate environmental hazards, and the means to improve its quality at reasonable costs. Students will learn how to control water pollution, maintain air quality, treat and properly dispose of wastes, and remediate sites contaminated due to improper disposal of hazardous waste. This minor also enhances students' employment opportunities in the field of environmental engineering. The program provides the necessary infrastructure for the pursuit of graduate studies in environmental engineering.

The minor in environmental engineering is offered to undergraduates in various fields of engineering and natural sciences.

Prerequisite Courses

CHEM 105aLbL or CHEM 115aLbL; MATH 125, MATH 126 and MATH 226, and PHYS 151L.

REQUIRED COURSES		UNITS
CE 443	Environmental Chemistry	3
CE 453	Water Quality Control	3
CE 463L	Water Chemistry and Analysis	3
ENE 201	Introduction to Applied Environmental Science and Engineering	4
ENE 410	Environmental Fluid Mechanics	3
ENE 428	Air Pollution Fundamentals, or	
ENE 429	Air Pollution Control	3
ENE 495	Seminars in Environmental Engineering	1
		minimum 20

**Bachelor of Science in Civil Engineering
Emphasis in Environmental Engineering**

See listing under Civil Engineering on page 623xx.

Master of Science in Environmental Engineering

See listing under Civil Engineering on page 625xx.

Engineer in Environmental Engineering

Requirements for the Engineer in Environmental Engineering are the same as set forth in the general requirements. See page 584xx.

Ph.D. in Engineering (Environmental Engineering)

See listing under Civil Engineering on page 626xx.

Sustainable Cities Graduate Certificate

See the listing in the USC Price School of Public Policy section on page 893xx.

Courses of Instruction**ENVIRONMENTAL ENGINEERING (ENE)**

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

ENE 201 Introduction to Applied Environmental Science and Engineering (4) Gateway to B.S. in Civil Engineering (Environmental Engineering), B.S., Environmental Engineering, and Minor in Environmental Engineering. Fundamental concepts of environmental science and engineering. Pollution control and remediation for air, water and soil. Pollution remediation for developing countries.

ENE 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

ENE 400 Environmental Engineering Principles (3, Sp) Analysis of water, air, and land pollution, including hazardous waste and engineering of mitigation measures. Water and waste water treatment analysis. *Prerequisite:* CHEM 105bL or CHEM 115bL; MATH 226; PHYS 152L.

ENE 410 Environmental Fluid Mechanics (3) Equation of motion; continuity, momentum, energy principles; dimensional analysis, similitudes; groundwater flows; transports in conduits and channels; mixing, dispersion in environments; manifold diffusers; hydraulic transients. (Duplicates credit in CE 309 and AME 309.) *Prerequisite:* MATH 245.

ENE 428 Air Pollution Fundamentals (3, Fa) Air pollution effects on man, vegetation, materials; pollutant sampling and analysis; air quality standards and criteria; meteorological factors and dispersion modeling. *Prerequisite:* MATH 245, PHYS 151L, CHEM 105bL or CHEM 115bL; *recommended preparation:* ENE 400 or CHE 350.

ENE 429 Air Pollution Control (3, Sp) Emission surveys; engineering controls of aerosols and gaseous contaminants at emission sources, disposition of contaminants. Field trips. Senior standing. *Prerequisite:* ENE 428; CE 309 or ENE 410.

ENE 443 Environmental Chemistry (3) (Enroll in CE 443)

ENE 453 Water Quality Control (3) (Enroll in CE 453)

ENE 463L Water Chemistry and Analysis (3) (Enroll in CE 463L)

ENE 465 Water Supply and Sewerage System Design (3) (Enroll in CE 465)

ENE 486 Design of Solid and Hazardous Waste Engineering Systems (3, Fa) Engineering design of solid and hazardous waste facilities such as waste minimization, secured landfill, and hazardous waste treatment. *Prerequisite:* ENE 400.

ENE 487 Environmental Biotechnology and Bioremediation (3) Understanding and designing microbiological processes for environmental protection; learning how processes in environmental biotechnology work; emerging applications for bioremediation of hazardous chemicals in the environment. *Prerequisite:* CE 210L, BISC 320L.

ENE 495 Seminars in Environmental Engineering (1, FaSp) Hazardous waste management, biodegradation of environmental pollutants, groundwater problems, waste minimization, energy resources, and air pollution control.

ENE 502 Environmental and Regulatory Compliance (3) Federal and state environmental laws; environmental impact assessment techniques; permitting for industrial facility construction and operation. *Prerequisite:* graduate standing.

ENE 503 Microbiology for Environmental Engineers (3) (Enroll in CE 503)

ENE 504 Solid Waste Management (3) (Enroll in CE 504)

ENE 505 Energy and the Environment (3, Fa) Environmental effects of energy development using fossil and fissile fuels, geothermics, photosynthesis, and other sources. Relationship of elemental cycles to the life supporting systems.

ENE 506 Ecology for Environmental Engineers (3, Fa) The role of environmental engineering in maintaining stability of freshwater, marine, and terrestrial ecosystems; macroscopic plant and animal forms as indicators of water quality.

ENE 510 Water Quality Management and Practice (3, Fa) Surface and ground water quality and resources management; water pollution in aquatic environment; water/wastewater infrastructure systems and management.

ENE 513L Instrumental Methods for Environmental Analysis (3) (Enroll in CE 513L)

ENE 514ab Advanced Sanitary Engineering Design (3-3) (Enroll in CE 514ab)

ENE 516 Hazardous Waste Management (3) Standards and regulations for the management of hazardous waste: identification, transportation, monitoring, storage, treatment, and disposal practices.

ENE 517 Industrial and Hazardous Waste Treatment and Disposal (3) (Enroll in CE 517)

ENE 518 Environmental Systems Engineering and Management (3) Evaluating, implementing and managing effective environmental systems to prevent pollution, conserve energy and resources, reduce risks and achieve sustainability in business and industries.

ENE 523 Process Kinetics and Dynamics in Environmental Engineering (3) (Enroll in CE 523)

ENE 526 Particulate Air Pollutants: Properties/Behavior/Measurement (3) Gaseous and particulate air pollutants, their measurement and instrumentation methods, and their effects on the environment and human health; studies on toxicity and risk assessment of selected pollutants.

ENE 535 Air Pollution Management: Exposure, Health Effects and Risk (3, Sp) Pollutant sampling; occupational, community, and personal exposures; receptor modeling; data analysis; health effects of air pollutants.

ENE 553 Chemical and Biological Processes in Environmental Engineering (3) (Enroll in CE 553)

ENE 560 Environmental Aspects of Oil and Gas Production (3) Environmental aspects of drilling for and producing oil and gas, and the necessary safety practices. Attention is given to the urban areas.

ENE 563 Chemistry and Biology of Natural Waters (3) (Enroll in CE 563)

ENE 580 Applied Environmental Engineering Biotechnology (3) Fundamentals of bioremediation processes; bioremediation technologies for decontamination of air, water, and soil; global applications of bioremediation techniques.

ENE 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

ENE 594abz Master's Thesis (2-2-0) Credit on acceptance of thesis. Graded IP/CR/NC.

ENE 596 Chemical Reactions in the Atmosphere (3, Fa) Chemical reactions and scavenging processes important in urban air pollution. Effects of solar irradiation on vehicle exhaust gases, oxides of nitrogen and sulfur.

ENE 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

ENE 794abcdz Doctoral Dissertation (2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC.

Computer Engineering

Undergraduate Degree

Education Program Objectives

The undergraduate program in computer engineering and computer science has the following objectives:

- Graduates will design and develop computer hardware that reflects the exigencies imposed by software design and development considerations.
- Graduates will develop software that makes efficient use of current and developing hardware technologies.
- Graduates will continue to develop the scientific and engineering skills and knowledge that will enable them to design and implement computer systems that effectively and efficiently integrate developing hardware and software technologies.
- Graduates will be exposed to extensive work experiences in both the areas of computer engineering and computer science.
- Most graduates will enter employment in their field.
- Some graduates will undertake graduate education in computer engineering and/or computer science.
- Graduates will engage in lifelong learning and understand contemporary developments in the field.
- The reputations of the electrical engineering and computer science departments, which jointly sponsor the CECS program, for attracting quality students and producing quality graduates, will be continuously improved.

Bachelor of Science in Computer Engineering and Computer Science

Students attaining the Bachelor of Science degree in computer engineering and computer science would possess the scientific and engineering skills and knowledge that would enable them to design and implement computer systems that effectively and efficiently integrate developing hardware and software technologies. This degree is administered jointly by the Departments of Computer Science and Electrical Engineering.

The requirement for the degree is 128 units. A cumulative grade point average of C (2.0) is required in all upper division courses applied towards the major, regardless of the department in which the courses are taken.

COMPOSITION/Writing REQUIREMENTS (7 UNITS)		UNITS
WRIT 140*	Writing and Critical Reasoning	4
WRIT 340	Advanced Writing	3

GENERAL EDUCATION (20 UNITS)		UNITS
General education*		20

ENGINEERING (2 UNITS)		UNITS
ENGR 102	Freshman Academy	2

PRE-MAJOR REQUIREMENTS (31 UNITS)		UNITS
<i>Math</i>		
MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 225	Linear Algebra and Differential Equations	4
MATH 226	Calculus III	4
EE 364	Introduction to Probability and Statistics for Electrical Engineering and Computer Science	3

Physics

PHYS 151L**	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4

Science elective***		4
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MAJOR REQUIREMENTS (69 UNITS)

Computer Science

CSCI 103L	Introduction to Programming	3
CSCI 104L	Data Structures and Object-Oriented Design	4
CSCI 109	Introduction to Computing	3
CSCI 170	Discrete Methods in Computer Science	4
CSCI 201L	Principles of Software Development	4
CSCI 270	Introduction to Algorithms and Theory of Computing	4
CSCI 402	Operating Systems	4

Electrical Engineering

EE 101	Introduction to Digital Logic	3
EE 201L	Introduction to Digital Circuits	4
EE 328Lx	Circuits and Electronics for Computer Engineers	4
EE 357	Basic Organization of Computer Systems	3
EE 454L	Introduction to Systems Using Microprocessors	4
EE 457	Computer Systems Organization	3

*Engineering Economy/Business Elective**

		3-4
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Senior Design Project

CSCI 477ab	Design and Construction of Large Software Systems (2-2), or Embedded Systems Design Laboratory (3)	3-4
EE 459L		

Electives

Technical elective**	12
Free elective	1-3
Total units:	128

**Satisfies GE requirement.

***Any course in physics, biology or chemistry beyond the basic science requirement or in another scientific discipline. See adviser for list of approved courses.

*Engineering Economy/Business Elective (1 course) Applicable courses include: BUAD 301, BAEP 450x, ISE 460

**Technical Electives (4 courses) Applicable courses include: CSCI 300, CSCI 351, CSCI 445, CSCI 459, CSCI 460, CSCI 464, CSCI 477ab, CSCI 480, CSCI 485, CSCI 486, CSCI 490x, CSCI 491ab, CSCI 499; EE 450, EE 459L, EE 465, EE 477L, EE 490x, EE 499; MATH 458. Students may also choose one adviser-approved course from the 300- and 400-level ITP offerings. Other courses may be applicable; please see an adviser for approval.

Graduate Degrees

The graduate program in computer engineering, offered through the Department of Electrical Engineering, is designed to provide students with an intensive background in the analysis, structure, design and function of digital computers and information processing systems. In addition to giving each student a fundamental background in digital logic, computer architecture and operating systems, a wide variety of elective courses allows for study in the following specialized areas: artificial intelligence; computer architecture; computer networks; computer system performance; design automation; fault-tolerant computers; microprocessors; parallel processing; real-time systems; robotics; and VLSI design.

Master of Science in Computer Engineering

The Master of Science in Computer Engineering is earned by completing an integrated program of at least 27 units of approved course work in computer engineering and computer science. No more than three courses (maximum 12 units) may be counted at the 400 level — at least 18 adviser-approved units must be taken at the 500 or 600 level.

All applicants must have taken the entrance requirement courses (or equivalent in other institutions) in order to be admitted to the program. Entrance requirement course credit cannot be applied toward the degree. A fundamental course may be waived by taking a placement exam. In case a placement exam is not offered, a fundamental course may be waived by a designated faculty member. At least 18 units must be taken at the 500-level or above. At least 18 units must be taken in electrical engineering, 15 of which must be taken at USC. Units taken outside of electrical engineering or computer science must be approved in advance by a computer engineering adviser and must be substantive in content and related to the degree objective. Up to 3 units of Directed Research (EE 590) with a computer engineering faculty member may be applied toward the degree.

ENTRANCE REQUIREMENT COURSES		UNITS
CSCI 455x	Introduction to Programming Systems Design	4
EE 357	Basic Organization of Computer Systems	3

Students must take or waive all four of the following fundamental courses (with the option of EE 450 or EE 465):

FUNDAMENTAL COURSES		UNITS
CSCI 402x	Operating Systems	3
EE 450	Introduction to Computer Networks, or	
EE 465	Probabilistic Methods in Computer Systems Modeling	3
EE 457	Computer Systems Organization	3
EE 477L	MOS VLSI Circuit Design	4

Students must take at least two of the following core courses (with the option of EE 550 or EE 555):

CORE COURSES		UNITS
EE 550	Design and Analysis of Computer Communication Networks, or	
EE 555	Broadband Network Architectures	3
EE 557	Computer Systems Architecture	3
EE 577a	VLSI System Design	3

Students must take at least 6 units from the following list of elective courses (cannot overlap with the core courses):

Computer Science: CSCI 545, CSCI 546, CSCI 547, CSCI 551, CSCI 555, CSCI 558L, CSCI 561, CSCI 565, CSCI 570, CSCI 584, CSCI 585, CSCI 595

Electrical Engineering: EE 532, EE 536ab, EE 549, EE 550, EE 552, EE 554, EE 555, EE 557, EE 558, EE 560, EE 577ab, EE 579, EE 630, EE 650, EE 652, EE 653, EE 657, EE 658, EE 659, EE 677, EE 680, EE 681

A minimum grade point average of 3.0 (A = 4.0) must be earned on all course work applied toward the master's degree in computer engineering. This average must also be achieved on all 400-level and above course work attempted at USC beyond the bachelor's degree. Transfer units which count as credit (CR) toward the master's degree are not computed in the grade point average. All other Viterbi School of Engineering requirements for the Master of Science apply.

Doctor of Philosophy in Computer Engineering

The requirements for the Doctor of Philosophy (Ph.D.) degree in computer engineering are in strict conformity with the requirements of the Graduate School. Program requirements for the Ph.D. in computer engineering are the same as those for the Ph.D. in electrical engineering except that the major field is computer engineering. See general requirements for graduate degrees.

Screening and qualifying examinations are administered by the computer engineering faculty. Students should contact the Electrical Engineering Systems Department Office for further information.

COURSE REQUIREMENTS

The following course work must be completed; these courses can be included in the 60-unit course work requirement:

Take two courses from theory area and four courses from the other three areas (hardware, software and systems), including at least one course from each area to total six courses.

Theory Area Courses

CSCI 570	Analysis of Algorithms	3
EE 465	Probabilistic Methods in Computer Systems Modeling, or	
EE 549	Queueing Theory for Performance Modeling	3
EE 562a	Random Processes in Engineering	3
EE 565a	Information Theory	3
MATH 410	Fundamental Concepts of Modern Algebra, or	
MATH 425a	Fundamental Concepts of Analysis	4
MATH 432	Applied Combinatorics, or	
MATH 533	Combinatorial Analysis and Algebra	4

Hardware Area Courses

EE 536a	Mixed Signal Integrated Circuit Design	3
EE 552	Asynchronous VLSI Design	3
EE 557	Computer Systems Architecture	3

Software Area Courses

CSCI 565	Compiler Design, or	
CSCI 595	Advanced Compiler Design	4
CSCI 577a	Software Engineering	4
CSCI 585	Database Systems	3

Systems Area Courses

CSCI 551	Computer Communications	3
CSCI 555	Advanced Operating Systems	3
CSCI 561	Foundations of Artificial Intelligence	3
EE 543a	Digital Control Systems	3
EE 554	Real Time Computer Systems	3
EE 550	Design and Analysis of Computer Communication Networks, or	
EE 555	Broadband Network Architectures	3
EE 569	Introduction to Digital Image Processing	3

Computer Science

Henry Salvatori Computer Science Center 300

(213) 740-4494

FAX: (213) 740-7285

Email: csdept@usc.edu

Chair: Gaurav Sukhatme, Ph.D.

Faculty

Chan Soon-Shiong Chair: Maja Mataric, Ph.D. (Neuroscience Center)

Fletcher Jones Chair in Computer Science: Michael A. Arbib, Ph.D.

Viterbi Early Career Chair: Jernej Barbic, Ph.D.

Gordon S. Marshall Chair in Engineering: Aristides A.G. Requicha, Ph.D.

Jack Munishian Early Career Chair: Fei Sha, Ph.D.

David Packard Chair in Manufacturing Engineering: Stephen C-Y Lu, Ph.D. (Mechanical Engineering, Industrial and Systems Engineering)

Charles Lee Powell Chair in Engineering: Viktor Prasanna, Ph.D. (Electrical Engineering)

Charles Lee Powell Chair in Electrical Engineering and Computer Science: Melvin Breuer, Ph.D. (Electrical Engineering)

Henry Salvatori Chair in Computer Science: Leonard M. Adleman, Ph.D.

Dean's Professor of Computer Science: Kevin Knight, Ph.D.

Helen N. & Emmett H. Jones Professorship in Engineering: Milind Tambe, Ph.D. (Industrial and Systems Engineering)

Seeley G. Mudd Professor of Engineering: Shanghua Teng, Ph.D.

TRW Professor of Software Engineering: Barry Boehm, Ph.D.

Professors: Leonard Adleman, Ph.D. (Molecular Biology); Michael Arbib, Ph.D. (Biomedical Engineering, Electrical Engineering); Barry Boehm, Ph.D. (Industrial and Systems Engineering); Leana Golubchik, Ph.D. (Electrical Engineering); Ramesh Govindan, Ph.D.; Ellis Horowitz, Ph.D. (Electrical Engineering); Ming-Deh Huang, Ph.D.; Sven Koenig, Ph.D.; Maja Mataric, Ph.D. (Neuroscience Center); Dennis McLeod, Ph.D.; Gerard Medioni, Ph.D. (Electrical Engineering); Neno Medvidovic, Ph.D.; Aiichiro Nakano, Ph.D. (Biomedical Engineering, Materials Science, Physics); Ulrich Neumann, Ph.D. (Electrical Engineering); Ramakant Nevatia, Ph.D. (Electrical Engineering); Aristides Requicha, Ph.D. (Electrical Engineering); Paul Rosenbloom, Ph.D.; Stefan Schaal, Ph.D.

(Neuroscience Center); Cyrus Shahabi, Ph.D.; Gaurav Sukhatme, Ph.D. (Electrical Engineering); Milind Tambe, Ph.D. (Industrial and Systems Engineering); Shanghua Teng, Ph.D.

Associate Professors: Shahram Ghandeharizadeh, Ph.D.; David Kempe, Ph.D.; Laurent Itti, Ph.D. (Neuroscience Center)

Assistant Professors: Jernej Barbic, Ph.D.; Shaddin Dughmi, Ph.D.; William GJ Halfond, Ph.D.; Ethan Katz-Bassett, Ph.D.; Yan Liu, Ph.D.; Fei Sha, Ph.D.; Minlan Yu, Ph.D.

Joint Professors: Edward Blum, Ph.D. (Mathematics); Melvin Breuer, Ph.D. (Electrical Engineering); Todd Brun, Ph.D.; Tim Ting Chen, Ph.D. (Biological Sciences); Kai Hwang, Ph.D. (Electrical Engineering); Rajiv Kalia, Ph.D. (Physics); Carl Kesselman, Ph.D. (Industrial and Systems Engineering); Bhaskar Krishnamachari, Ph.D. (Electrical Engineering); C-C Jay Kuo, Ph.D. (Signal and Image Processing); Stephen Lu, Ph.D. (Industrial and Systems Engineering); Shrikanth (Shri) Narayanan, Ph.D. (Electrical Engineering); Viktor Prasanna, Ph.D. (Electrical Engineering); Konstantinos Psounis, Ph.D.; C.S. Raghavendra, Ph.D. (Electrical Engineering); Nicolas Schweighofer, Ph.D. (Biokinesiology and Physical Therapy); Francisco Valero-Cuevas (Biomedical Engineering); Priya Vashishta, Ph.D. (Material Science, Physics); Michael Waterman, Ph.D. (Mathematics); Richard Weinberg, Ph.D. (Cinematic Arts); John Wilson, Ph.D. (Geography); Xianghong Zhou, Ph.D. (Biological Sciences)

Adjunct Professors: Danny Cohen, Ph.D.; Rick Selby, Ph.D.; Sethu Vijayakumar, Ph.D.; Roger Zimmermann, Ph.D.

Adjunct Associate Professors: Steve Chien, Ph.D.; Mary Hall, Ph.D.; Larry Matthies, Ph.D.; Zhengyou Zhang, Ph.D.

Adjunct Assistant Professors: Aude Billard, Ph.D.; Alexander Egyed, Ph.D.; Andrew Howard, Ph.D.; Auke Ijspeert, Ph.D.; Steve Jacobs, Ph.D.; Marcelo Kallmann, Ph.D.; Sofus Macskassy, Ph.D.; Chris Mattmann, Ph.D.; Xin Wang, Ph.D.

Research Professors: Paul Debevec, Ph.D.; Yolanda Gil, Ph.D.; John Heidemann, Ph.D.; Randall Hill, Ph.D.; Jerry Hobbs, Ph.D.; Carl Kesselman, Ph.D.; Kevin Knight, Ph.D.; Craig Knoblock, Ph.D.; Herbert Schorr, Ph.D.; William Swartout, Ph.D.

Research Associate Professors: Ann L. Chervenak, Ph.D.; Ewa Deelman, Ph.D.; Andrew Gordon, Ph.D.; Jonathan Gratch, Ph.D.; Eduard Hovy, Ph.D.; Kristina Lerman, Ph.D.; Robert Lucas, Ph.D.; Daniel Marcu, Ph.D.; Stacey Marsella, Ph.D.; Robert Neches, Ph.D.; Clifford Neuman, Ph.D.; Wei-Min Shen, Ph.D.; Joseph Touch, Ph.D.

Research Assistant Professors: Jose Luis Ambite, Ph.D.; Yu-Han Chang, Ph.D.; David Chiang, Ph.D.; Young Cho, Ph.D.; Morteza Dehghani, Ph.D.; David DeVault, Ph.D.; Pedro Diniz, Ph.D.; Aram Galstyan, Ph.D.; Jihie Kim, Ph.D.; Zornitsa Kozareva, Ph.D.; Anton Leuski, Ph.D.; Rajiv Maheswaran, Ph.D.; Jelena Mirkovic, Ph.D.; Louis-Philippe Morency, Ph.D.; Kenji Sagae, Ph.D.; Pedro Szekely, Ph.D.; David Traum, Ph.D.; Suya You, Ph.D.

Lecturers: Claire Bono; William Cheng, Ph.D.; Michael Crowley, Ph.D. (Professor of Engineering Practice); Scott Easley, B.A.; Massoud Ghaym-Khah, Ed.D.; Shawn Shamsian, Ph.D.; Sheila Tejada, Ph.D. (Senior Lecturer); David Wilczynski, Ph.D.; Michael Zyda, Ph.D. (Professor of Engineering Practice)

Emeritus Professor: George Bekey, Ph.D. (Electrical Engineering, Biomedical Engineering)

Bachelor of Science

Educational Program Objectives

(1) Technical Competence

Graduates have solved problems encountered in modern practice using the mathematics skills and knowledge about computer hardware and software learned at the university.

Graduates have worked on projects in which they were required to model, analyze, design and experimentally evaluate components or systems to achieve desired technical specifications subject to the reality of economic constraints.

(2) Professional Development

Graduates have followed a career path for which they have been trained either through suitable employment or graduate studies.

Graduates have adapted or extended their professional skills in order to compete effectively in a world of rapid technological change.

Graduates have moved into fields with strong information technology components, such as business, law, cinema and music, through graduate-level studies and the process of lifelong learning.

(3) Citizenship in the Global Community

Graduates have shown the capabilities and communication skills necessary to function effectively either as individuals, members or leaders of multidisciplinary teams in a diverse global economy.

Graduates have shown an understanding of the importance of high ethical and professional standards as well as the significance of engineering decisions and solutions in a global, environmental and societal context.

Bachelor of Science in Computer Science

The undergraduate program in computer science is an interdisciplinary program leading to the Bachelor of Science in computer science. The program is designed to provide both an academic and professional orientation.

General admission requirements for the undergraduate program are the same as those of the university and

the USC Viterbi School of Engineering and include 3 to 5 units of mathematics and one unit of science (biology, chemistry or physics) together with satisfactory scores on the Scholastic Aptitude Test and Achievement Tests. The requirement for the degree is 128 units. A cumulative grade point average of C (2.0) is required for all courses taken at USC as well as all upper division courses applied towards the major, regardless of the department in which the courses are taken. Candidates must complete general education requirements; see pages 63xx and 250xx.

COMPOSITION/WRITING REQUIREMENT (7 UNITS)		UNITS
WRIT 140	Writing and Critical Reasoning	4
WRIT 340*	Advanced Writing	3

GENERAL EDUCATION (20 UNITS)		UNITS
General education*		20

PRE-MAJOR REQUIREMENTS (31 UNITS)		UNITS
<i>Math Requirement</i>		
MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 225	Linear Algebra and Differential Equations	4
MATH 226	Calculus III	4
EE 364	Introduction to Probability and Statistics for Electrical Engineering and Computer Science	3

Basic Science

One of the following two course sequences:

BISC 120L** and BISC 220L, or		
CHEM 105aLbL**, or		
PHYS 151L** and PHYS 152L		8

Other Requirements

Science elective***		4
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MAJOR REQUIREMENTS (70 UNITS)		UNITS
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<i>Engineering</i>		
ENGR 102	Engineering Freshman Academy	2

Computer Science

CSCI 103L	Introduction to Programming	3
CSCI 104L	Data Structures and Object-Oriented Design	4
CSCI 109	Introduction to Computing	3
CSCI 170	Discrete Methods in Computer Science	4
CSCI 201L	Principles of Software Development	4
CSCI 270	Introduction to Algorithms and Theory of Computing	4
CSCI 402x	Operating Systems	4
CSCI 477ab	Design and Construction of Large Software Systems	2-2

Electrical Engineering

EE 101	Introduction to Digital Logic	3
EE 201L	Introduction to Digital Circuits	4
EE 357	Basic Organization of Computer Systems	3
Engineering economy/business elective		3-4

Technical electives	12
Free electives	12-13
Total units:	128

*WRIT 340 Advanced Writing (Communication for Engineers) is strongly recommended for CSCI majors.

**Satisfies general education requirement.

***Any course in physics, biology or chemistry beyond the basic science requirement or in another scientific discipline. See adviser for a list of approved electives.

*The university allows engineering students to replace GE Category IV with a second course in Categories I, II or VI.

Technical Electives (four courses)

Applicable courses include: CSCI 300, CSCI 351, CSCI 445, CSCI 459, CSCI 460, CSCI 464, CSCI 480, CSCI 485, CSCI 490x, CSCI 499; EE 450, EE 454L, EE 459L, EE 465, EE 477L, EE 490x, EE 499; MATH 458. Other courses may be applicable; please see an adviser for approval.

Engineering Economy/Business Elective (one course)

Applicable courses include: BUAD 301, BAEP 450x, ISE 460

Bachelor of Science in Computer Science (Games)

The goal of the B.S. in Computer Science (Games) program is to graduate students with a solid grounding in computer science and a cross-disciplinary background in game development. Topics covered in the cross-disciplinary game development portion of the degree program include game production, visual design for games and interactives, computer animation, video game programming, game hardware architectures, game engine programming, serious game development, introductory and intermediate game design, and two semester-long final game projects. Students graduating from this program will be capable of engineering next-generation games and simulations and their technologies in the entertainment and serious game fields. Additionally, graduates from this program will be able to further their education in graduate programs in game development and computer science.

The requirement for the degree is 128 units. A cumulative grade point average of C (2.0) is required for all courses taken at USC as well as all upper division courses applied towards the major, regardless of the department in which the courses are taken.

COMPUTER SCIENCE AND

COMPUTER ENGINEERING (38 UNITS)		UNITS
CSCI 103L	Introduction to Programming	3
CSCI 104L	Data Structures and Object-Oriented Design	4
CSCI 109	Introduction to Computing	3
CSCI 170	Discrete Methods in Computer Science	4
CSCI 201L	Principles of Software Development	4
CSCI 270	Introduction to Algorithms and Theory of Computing	4
CSCI 402x	Operating Systems	4
CSCI 460	Introduction to Artificial Intelligence	3
CSCI 480	Computer Graphics	3

EE 352L	Computer Organization and Architecture	3
EE 450	Introduction to Computer Networks	3

GAME DEVELOPMENT (39 UNITS)

		UNITS
CSCI 180	Survey of Digital Games and Their Technologies	3
CSCI 281	Pipelines for Games and Interactives	3
CSCI 491abL	Final Game Project	4-2
CSCI 492	Immersive Game Design	2
CTAN 452	Introduction to 3-D Computer Animation	2
CTIN 484L	Intermediate Game Development	2
CTIN 488	Game Design Workshop	4
CTIN 489	Intermediate Game Design Workshop	2
EE 452L	Game Hardware Architectures	3
ITP 280	Video Game Production	4
ITP 380	Video Game Programming	4
ITP 485	Programming Game Engines	4

MATH (11-12 UNITS)

MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 225	Linear Algebra and Linear Differential Equations (4), or	
EE 241	Applied Linear Algebra for Engineering (3)	3-4

SCIENCE (4 UNITS)

PHYS 151L*	Fundamentals of Physics I: Mechanics and Thermodynamics	4
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WRITING (7 UNITS)

WRIT 140	Writing and Critical Reasoning	4
WRIT 340	Advanced Writing	3

GENERAL EDUCATION (20 UNITS)

The major will comply with the university general education and diversity requirements. 20

*PHYS 151L satisfies a GE requirement.

TECHNICAL ELECTIVES (8 UNITS)

Choose a minimum of 8 units from the following:

CSCI 351	Programming and Multimedia on the World Wide Web	3
CSCI 477ab***	Design and Construction of Large Software Systems	2-2
CSCI 485	File and Database Management	3
CSCI 490x	Directed Research	1-8
CSCI 499	Special Topics	2-4
CTAN 330	Animation Fundamentals	2
CTAN 443L	Character Development for 3-D Animation and Games	2
CTIN 401L	Interface Design for Games	2
CTIN 403	Advanced Visual Design for Gamers	2
CTIN 404L	Usability Testing for Games	2
CTIN 405L	Design and Technology for Mobile Experiences	2
CTIN 406L	Sound Design for Games	2

CTIN 458	Business and Management of Games	2	MATH 125	Calculus I	4
CTIN 459L***	Game Industry Workshop	4	MATH 126	Calculus II	4
CTIN 462	Critical Theory and Analysis of Games	4	MATH 225	Linear Algebra and Linear Differential Equations (4), or	
CTIN 463	Anatomy of a Game	4	EE 241	Applied Linear Algebra for Engineering (3)	3-4
CTIN 482	Designing Online Multiplayer Game Environments	2	PHYS 151L	Fundamentals of Physics II: Electricity and Magnetism	4
CTIN 483	Introduction to Game Development	4	Total engineering units:		56-57
CTIN 492L	Experimental Game Topics	4, max 8	BUSINESS REQUIREMENTS		UNITS
EE 320	Digital Media Basics for Multimedia	3	ACCT 410X	Accounting for Non-Business Majors	4
ENGR 395abc***	Cooperative Education Work Experience (students who take 3 units of Co-op may use it as one technical elective)	1 or 2, max 5	BUAD 302	Communication Strategy in Business	4
Free Electives		2-3	BUAD 304	Organizational Behavior	4
Total units required for degree:		128	BUAD 306	Business Finance	4
			BUAD 307	Marketing Fundamentals	4
			BUAD 311	Operations Management	4
			BUAD 497	Strategic Management	4
			ECON 351X	Microeconomics for Business	4
			ECON 352X	Macroeconomics for Business	4
			BUAD 310	Applied Business Statistics (4), or	
			EE 364	Introduction to Probability and Statistics for Electrical Engineering (3)	3-4

Other courses may be eligible subject to adviser approval.

***Highly recommended

Note: Students are strongly encouraged to take at least 1 unit of internship

Bachelor of Science in Computer Science/Business Administration

The combined Bachelor of Science degree program in computer science/business administration offers qualified students the opportunity to gain an educational foundation in both areas. The degree is administered by the Computer Science department.

The minimum requirement for the degree is 130 units. A cumulative grade point average of C (2.0) is required for all courses taken at USC as well as all upper division courses applied toward the major, regardless of the department in which the courses are taken.

COMPOSITION/WRITING REQUIREMENT (7 UNITS)		UNITS
WRIT 140	Writing and Critical Reasoning	4
WRIT 340	Advanced Writing	3

GENERAL EDUCATION (20 UNITS)		UNITS
General education*		20

ENGINEERING REQUIREMENTS (56-57 UNITS)		UNITS
CSCI 103L	Introduction to Programming	3
CSCI 104L	Data Structures and Object-Oriented Design	4
CSCI 109	Introduction to Computing	3
CSCI 170	Discrete Methods in Computer Science	4
CSCI 201L	Principles of Software Development	4
CSCI 270	Introduction to Algorithms and Theory of Computing	4
CSCI 477ab	Design and Construction of Large Software Systems	2-2
CSCI technical electives (see department for approved list)		6
EE 101	Introduction to Digital Logic	3
EE 201L	Introduction to Digital Circuits	4
ENGR 102	Freshmen Academy Seminar	2

BUSINESS REQUIREMENTS		UNITS
ACCT 410X	Accounting for Non-Business Majors	4
BUAD 302	Communication Strategy in Business	4
BUAD 304	Organizational Behavior	4
BUAD 306	Business Finance	4
BUAD 307	Marketing Fundamentals	4
BUAD 311	Operations Management	4
BUAD 497	Strategic Management	4
ECON 351X	Microeconomics for Business	4
ECON 352X	Macroeconomics for Business	4
BUAD 310	Applied Business Statistics (4), or	
EE 364	Introduction to Probability and Statistics for Electrical Engineering (3)	3-4
Business Electives		
300- or 400-level ACCT, BAEP, non-required BUAD, BUCCO, FBE, IOM, MKT or MOR		8
Total business units		47-48

Total program units: 130-132

Physics/Computer Science Major Requirements for the Bachelor of Science

This program is intended for students with dual interests in physics and computer science who wish to complete the essential courses for both majors within their normal four year career. See the Physics and Astronomy Department section, page 431xx, for course requirements.

Bachelor of Science in Computer Engineering and Computer Science

See the listing under Computer Engineering, page 634xx.

Minor in Computer Science

The computer science minor introduces the concepts, tools and techniques that are involved in the programming of computers. The minor prepares students to achieve mastery in several current programming languages. In addition, the student will learn about creating effective user interfaces and how to build applications that are available on the Internet.

REQUIRED COURSES		UNITS
<i>Lower division</i> (18 units)		
CSCI 103L	Introduction to Programming	3
CSCI 104L	Data Structures and Object-Oriented Design	4
CSCI 109	Introduction to Computing	3
CSCI 170	Discrete Methods in Computer Science	4

CSCI 201L	Principles of Software Development (3), or	
CSCI 270	Introduction to Algorithms and Theory of Computing (4)	3-4

ELECTIVES		UNITS
12 units selected from the following courses:		
CSCI 351	Programming and Multimedia on the World Wide Web	3
CSCI 445	Introduction to Robotics	4
CSCI 460	Introduction to Artificial Intelligence	3
CSCI 477ab	Design and Construction of Large Software Systems	2-2
CSCI 480	Computer Graphics	3
CSCI 485	File and Database Management	3
CSCI 499	Special Topics	2-4

Total: 30 units

Note: Students majoring in business may wish to take CSCI 477 and CSCI 485: These courses will prepare them to utilize computers in a corporate setting.

Note: Students majoring in fine arts or cinematic arts may wish to take CSCI 460 and CSCI 480: These courses will prepare them to apply computers to movies and online games.

Note: Students majoring in chemistry or physics may prefer to take CSCI 445 and CSCI 460: These courses will prepare them to create sophisticated software for scientific applications.

Minor in Engineering Technology Commercialization

See listing under the Special Educational Opportunities section, page 586xx.

Minor in 2-D Art for Games

This interdisciplinary minor integrates three major disciplines (fine arts, computer science and interactive media) to develop the 2-D visual skills necessary to conceptualize and illustrate images for games. For more information, see USC Roski School of Fine Arts, page 690xx.

Minor in 3-D Art for Games

The focus of the 3-D Art for Games minor is a trans-disciplinary approach that incorporates the creative, technological and team-based communication skills necessary to develop 3-D art skills for video games. For more information, see USC Roski School of Fine Arts, page 690xx.

Graduate Degrees

The requirements listed below are special to this department and must be read in conjunction with the general requirements of the USC Viterbi School of Engineering for master's degrees and the general requirements of the USC Graduate School for Ph.D. degrees, page 102xx. The graduate program in computer science provides intensive preparation in the basic concepts and techniques related to the design, programming and application of digital computers. Both the Master of Science and Doctor of Philosophy degrees are offered.

A Master of Science degree with specialization in software engineering is also offered. The program seeks to prepare students for an industrial leadership career in software engineering. It also serves as an introduction to this area for students who wish to pursue advanced studies and research leading to a Ph.D.

A Master of Science degree with specialization in intelligent robotics is also offered. This program seeks to prepare students for an industrial career in the development of computer systems for CAD/CAM (Computer-Aided Design and Manufacturing) and robotics. It also serves as an introduction to this area for students who wish to pursue advanced studies and research leading to a Ph.D. The emphasis is on the domain of mechanical, electromechanical and mechatronic products. (CAD for digital systems is covered by a separate program offered by the Electrical Engineering-Systems department.)

A Master of Science degree with a specialization in computer networks is offered. This specialization prepares students in the areas of computer communications, networks and distributed processing.

A Master of Science in computer science (multi-media and creative technologies) is also offered, see page 678xx.

A Master of Science in computer science (high performance computing and simulations) is also offered, see page 642xx.

Admission and Prerequisites

Admission is determined by the Office of Admission and the Viterbi School of Engineering, in consultation with the Computer Science Department. The applicant is required to have a bachelor's degree or its equivalent from an accredited college or university; satisfactory scores on the verbal and quantitative portions of the aptitude test of the Graduate Record Examinations (one advanced test from computer science, mathematics or engineering is recommended); and a substantial background in computing constitutes a minimum requirement. Foreign students must earn a satisfactory score on the Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS).

Master of Science in Computer Science

Requirements for Graduation without a Thesis

A minimum grade point average of 3.0 must be earned on all course work applied toward the master's degree in computer science. This average must also be earned on all graduate courses completed at USC (400-level and above). Transfer units count as credit (CR) toward the master's degree and are not computed in the grade point average. The required courses are as follows: CSCI 570 and one course from each of the following two categories: *I.* CSCI 551, CSCI 555, CSCI 571, CSCI 577a, CSCI 585, EE 557; *II.* CSCI 545, CSCI 561, CSCI 564, CSCI 574, CSCI 580, CSCI 582. A maximum of 4 units may be taken at the 400 level from approved courses in either electrical engineering or computer science; the remaining units must be approved courses at the 500 or 600 level. CSCI 590 and ENGR 596 may be counted for a maximum of 6 units. Total units required for the degree is 27. No examination is required for the degree. Other requirements for the Master of Science in computer science are the same as set forth in the general requirements for Viterbi School of Engineering master's degrees.

A maximum of 4 units may be taken at the 400 level from approved courses in either electrical engineering or computer science; the specialization "Game Development" allows for up to 7 units at the 400 level. The remaining units must be approved courses at the 500 or 600 level.

Thesis Option

With the approval of a supervising professor, qualified students may be allowed to pursue a thesis option. Students pursuing the thesis option must satisfy all of the policies and course requirements for the master's degree with the following exceptions: A maximum of 6 units from approved courses may be taken at the 400 level in either electrical engineering or computer science; and CSCI 590 and ENGR 596 may be counted for a maximum of 2 units. In addition, these students must enroll in a minimum of two semesters of CSCI 594abz for a maximum of 4 units. Total units required for the degree is 27. The thesis must comply with all requirements set by the Graduate School. The thesis option is available to students pursuing degrees in the following programs: M.S. in computer science and M.S. in computer science with specializations in computer networks, software engineering, intelligent robotics, multimedia and creative technologies, computer security and high performance computing simulations.

Master of Science in Computer Science

(Data Science)

The Master of Science in Computer Science (Data Science) provides students with a core background in computer science and specialized algorithmic, statistical and systems expertise in acquiring, storing, accessing, analyzing and visualizing large, heterogeneous and real-time data associated with diverse real-world domains including energy, the environment, health, media, medicine and transportation. Students must satisfy all the requirements for the Master of Science degree in Computer Science. The following additional requirements must be met to obtain an M.S. in Computer Science with a specialization in Data Science.

REQUIRED COURSES		UNITS
CSCI 561	Artificial Intelligence	3
CSCI 570	Analysis of Algorithms	3
CSCI 585	Database Systems	3
EE 517	Statistics for Engineers	3

GROUP ELECTIVES (MUST TAKE 3 COURSES WITH A

MINIMUM OF 1 COURSE FROM EACH GROUP):

		UNITS
Group 1 (Data Systems):		
CSCI 548	Information Integration on the Web	3
CSCI 572	Information Retrieval and Web Search Engines	3
CSCI 586	Database Systems Interoperability	3
CSCI 587	Geospatial Information Management	3
CSCI 653	High Performance Computing and Simulations	3
CSCI 685	Advanced Topics in Database Systems	3

Group 2 (Data Analysis):

CSCI 567	Machine Learning	3
CSCI 573	Probabilistic Reasoning	3
CSCI 686	Advanced Big Data Analytics	3
ISE 520	Optimization: Theory and Algorithms	3
MATH 467	Theory and Computational Methods for Optimization	4
MATH 574	Applied Matrix Analysis	3

ELECTIVES (A MINIMUM OF 2 COURSES)

		UNITS
Any 500- or 600-level course in CSCI (including additional group electives)		
MATH 458	Numerical Methods	4
MATH 501	Numerical Analysis and Computation	3
MATH 502ab	Numerical Analysis	3-3
MATH 505a	Applied Probability	3
MATH 601	Optimization Theory and Techniques	3
MATH 650	Seminar in Statistical Consulting	3

Total units required for the degree is 27. No more than 4 units may be taken at the 400-level.

Master of Science in Computer Science (Game Development)

The goal of the M.S. in Computer Science (Game Development) program is to graduate students with a core in computer science, an engineering-oriented game development core and a concentration in one of the key research directions in game development infrastructure, cognition and games, immersion and serious games. Infrastructure is researching and developing the software and hardware infrastructure necessary for the development of the future of interactive games and large-scale simulations; massively multiplayer online games (MMOGs) and simulation networks; game engines and tools; instant games; wireless and mobile games and infrastructures; and next generation consoles. Cognition and games is developing theories for modeling and simulating computer characters and story; developing methods for modeling, simulating and displaying human emotion; analyzing large-scale game play; and developing theories for infusing pedagogy with game play. Immersion is researching and developing the technologies to engage the mind of the game player via sensory stimulation; reading the human emotional state and providing that as an input to the game; and emotionally adaptive game software architectures. Serious games and simulations is developing a theory for the deployment of games and simulations for purposes of education and training, health, public policy and strategic communication; game evaluation; serious game development; and human performance engineering. Students graduating from this program will be capable of engineering next generation games and simulations and their required technologies immediately upon graduation in the entertainment and serious game fields. Additionally, graduates from this program will be able to further their education in graduate programs in game development and computer science. The long-term goal with this M.S. degree is to establish research and development directions that create a science of games

and an accompanying archival literature that improves game development for both serious and entertainment purposes.

CSCI (9 UNITS) UNITS

CSCI 570	Analysis of Algorithms	3
CSCI 580	3-D Computer Graphics and Rendering	3
One of the following:		
CSCI 555	Advanced Operating Systems	3
CSCI 561	Foundations of Artificial Intelligence, or	
CSCI 573	Probabilistic Reasoning	3
CSCI 571	Web Technologies	3
CSCI 577a	Software Engineering	4
CSCI 585	Database Systems	3
EE 557	Computer Systems Architecture	3

GAME DEVELOPMENT CORE (11 UNITS) UNITS

CSCI 522	Game Engine Development	4
CTIN 488	Game Design Workshop	4
EE 452	Game Hardware Architectures	3

PROJECT CLASSES (7 UNITS) UNITS

CSCI 529ab	Advanced Game Projects	4-3
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ELECTIVES UNITS

Complete two courses from one of the following areas of concentration: Infrastructure; Cognition and Games; Immersion; Serious Games.

Infrastructure

CSCI 503	Parallel Programming	3
CSCI 520	Computer Animation and Simulation	3
CSCI 522	Game Engine Development	4
CSCI 523	Networked Games	3
CSCI 524	Networked Artificial Intelligence	3
CSCI 526	Advanced Mobile Devices and Game Consoles	3

Cognition and Games

CSCI 524	Networked Artificial Intelligence	3
CSCI 534	Affective Computing	3
CSCI 541	Artificial Intelligence Planning	3
CSCI 543	Software Multiagent Systems	3
CSCI 573	Probabilistic Reasoning	3

Immersion

CSCI 520	Computer Animation and Simulation	3
CSCI 523	Networked Games	3
CSCI 537	Immersive Environments	3
CSCI 538	Human Performance Engineering	3
CSCI 574	Computer Vision	3
CSCI 588	Specification and Design of User Interface Software	3
CTAN 502a	Experiments in Stereoscopic Imaging	2

CTIN 488	Intermediate Game Design Workshop	4
EE 619	Advanced Topics in Automatic Speech Recognition	3

Serious Games

CSCI 486	Serious Games Development	3
CSCI 520	Computer Animation and Simulation	3
CSCI 537	Immersive Environments	3
CSCI 538	Human Performance Engineering	3

Other courses may be eligible subject to adviser approval.

Total units: 33

Master of Science in Computer Science (Computer Networks)

Under the networks option students must satisfy the requirements for the Master of Science in Computer Science and the following courses must be included in the program: EE 450, CSCI 551, CSCI 555 and three of the following: CSCI 558; CSCI 599 or CSCI 694a or CSCI 694b; EE 549, EE 550 and EE 555. Total units required for the degree is 27. Students who can demonstrate that they have already taken these courses (or equivalent) may be waived out of the requirement by a memo from their faculty adviser. All courses must be approved by a faculty adviser. A list of suggested electives is available from the department office.

Master of Science in Computer Science (Computer Security)

Completion of this program satisfies all the requirements for the Master of Science in computer science.

REQUIRED COURSES UNITS

CSCI 530	Security Systems	4
CSCI 531	Applied Cryptography	3
CSCI 551	Computer Communications	3
CSCI 555	Advanced Operating Systems	3
CSCI 570	Analysis of Algorithms	3
CSCI 577a	Software Engineering, or	4
CSCI 578	Software Architectures	3

At least one of the following courses:

CSCI 545	Robotics	3
CSCI 561*	Foundations of Artificial Intelligence	3
CSCI 564	Brain Theory and Artificial Intelligence	3
CSCI 573*	Probabilistic Reasoning	3
CSCI 574	Computer Vision	3
CSCI 580	3-D Graphics and Rendering	3
CSCI 582	Geometric Modeling	3

At least two of the following courses:

CSCI 556	Introduction to Cryptography	3
CSCI 558L	Internetworking and Distributed Systems Laboratory	3
CSCI 571	Web Technologies	3
CSCI 585	Database Systems	3

CSCI 599**	Special Topics	2-4, max 9
CSCI 694a	Topics in Computer Networks and Distributed Systems	3
Total Units:		28

*CSCI 561 or CSCI 573 is recommended for this specialization. CSCI 573 may be used in place of CSCI 561 to satisfy the requirements for the general M.S. degree.

**Topics must be pre-approved by an adviser. Course must be a minimum of 3 units.

Master of Science in Computer Science (High Performance Computing and Simulations)

Students in the MSCS-HPCS program must satisfy the current core requirements for the Master of Science in computer science and the following elective courses must be included in the program:

REQUIRED CORE COURSE UNITS

CSCI 596*	Scientific Computing and Visualization	3
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TECHNICAL ELECTIVE COURSES UNITS

Three of the following courses — students must take courses from both the computer science track and the computational science/engineering application track.

Computer Science Track

CSCI 503	Parallel Programming	3
CSCI 520	Computer Animation and Simulation	3
CSCI 551*	Computer Communications	3
CSCI 558L	Internetworking and Distributed Systems Laboratory	3
CSCI 580	3-D Graphics and Rendering	3
CSCI 583*	Computational Geometry	3
CSCI 595	Advanced Compiler Design	4
CSCI 653*	High Performance Computing and Simulations	3
EE 653	Advanced Topics in Microarchitecture	3
EE 657*	Parallel and Distributed Computing	3
EE 659*	Interconnection Networks	3
MATH 501	Numerical Analysis and Computing	3

Computational Science/Engineering Application Track

AME 535a*	Introduction to Computational Fluid Dynamics, or	
AME 535b*	Introduction to Computational Fluid Dynamics	3
CE 529a*	Finite Element Analysis	3
CHE 502	Numerical Methods for Diffusive and Convective Transport	3
EE 553*	Computational Solution of Optimization Problems	3
MASC 575*	Basics of Atomistic Simulations of Materials	3
MATH 578a	Computational Molecular Biology	3
PHYS 516	Methods of Computational Physics	3

PTE 582*	Fluid Flow and Transport Processes in Porous Media	3
Adviser approved remainder of elective units		6
*Courses offered through the Distance Education Network (DEN).		

Master of Science in Computer Science (Multimedia and Creative Technologies)

See the listing under Multimedia and Creative Technologies, page 678xx.

Master of Science in Computer Science (Software Engineering)

Students must satisfy all requirements for the Master of Science degree in Computer Science. In addition, they must take the following courses, CSCI 510, CSCI 577ab and CSCI 578, plus three of the following six courses: CSCI 503, CSCI 511, CSCI 555, CSCI 585, CSCI 588 and EE 557 (EE 557, CSCI 555, CSCI 577a, and CSCI 585 may be used to satisfy both the general master's degree requirements and the specialization requirements.) Students may also include research for an optional master's thesis in their programs.

Master of Science in Computer Science (Intelligent Robotics)

Students must take CSCI 545 and three of the following courses: CSCI 445, CSCI 547, CSCI 584, and CSCI 593. Other requirements are the same as for the Master of Science degree in computer science, described above. (CSCI 561 and CSCI 545 may be used to help satisfy both the general master's requirements and the specialization requirements.) Students may include in their programs research for an optional master's thesis conducted in collaboration with industry.

Master of Science in Computer Science (Technical Professionals)

The M.S. program offers a cohort-based degree designed for computer science technical professionals with three–five years of work experience. Students may begin the program at any point in the year — fall, spring, or summer. It is possible to complete the degree in one calendar year. The GRE general exam is recommended but not required. An interview is required of all finalists.

REQUIRED COURSES*		UNITS
CSCI 402**	Introduction to Operating Systems	4
CSCI 561	Foundations of Artificial Intelligence, or	
CSCI 580***	3-D Graphics and Rendering	3
CSCI 570	Analysis of Algorithms	3
CSCI 571	Web Technologies	3
CSCI 576	Multimedia Systems Design	3
CSCI 577ab	Software Engineering	4-4
CSCI 585	Database Systems	3
Total units:		27

*Students enrolled in the program are not limited to the courses listed here. These are simply the courses which we routinely offer in evening sessions. Schedule permitting, students are free to take advantage of our full array of courses, including those offered during the day. However, any course selection beyond this list should be done in consultation with an academic adviser.

**Students who can demonstrate programming proficiency may replace CSCI 402 with another 500-level elective.

***If a student wishes to take both CSCI 561 and CSCI 580, the second course may be taken in place of CSCI 571, CSCI 576, or CSCI 585.

Graduate Certificate in Software Architecture

This certificate program will provide engineers with the skills required to face the increasingly complex future in architecting systems, systems of systems and software-intensive systems. Students will be exposed to the concepts, principles and state-of-the-art methods in software architectures. This program introduces principles and approaches for modeling systems using SysML; applies software engineering process models and management approaches to the design and architecture of large software systems; and guides the architect through every phase of the conception, implementation, deployment and finally retirement of software systems. It is expected that participants in the certificate program will have completed an undergraduate degree in computer science or a related field and will have several years of practical experience in software engineering and/or systems engineering. If students are later admitted to the Master of Science in Computer Science, the courses taken for the certificate may be applied to that program.

REQUIRED COURSES		UNITS
CSCI 568	Requirements Engineering	3
CSCI 578	Software Architectures	3
SAE 547	Model-Based Systems Architecting and Engineering	3
SAE 549	Systems Architecting	3

ELECTIVES (CHOOSE ONE)		UNITS
CSCI 510	Software Management and Economics	3
CSCI 530*	Security Systems	4
CSCI 555*	Advanced Operating Systems	3
CSCI 577a	Software Engineering	4
CSCI 577b	Software Engineering	4
CSCI 589**	Software Engineering for Embedded Systems	3
EE 557***	Computer Systems Architecture	3
SAE 541	Systems Engineering Theory and Practice	3
Total Units:		15

*Prerequisite: CSCI 402

**Prerequisite: CSCI 577a

***Prerequisite: EE 457

Doctor of Philosophy in Computer Science

The Doctor of Philosophy degree in computer science is awarded in strict conformity with the general requirements of the USC Graduate School.

Admission to the Ph.D. program in computer science is highly selective, based upon a superior academic record, prior training in computer science, letters of recommendation, a statement of purpose and Graduate Record Examinations scores. Applicants are expected to have completed the equivalent course work necessary to satisfy the general breadth requirements outlined in the Master's Admissions and Prerequisites

section (see page 630xx). Particular attention is given to the applicant's potential to perform original research in an area of computer science. Since research potential is a key factor in the evaluation, new students are strongly urged to begin research with a computer science faculty member as soon as possible. See general requirements for graduate degrees.

Screening Procedure

When a student has completed 21 units or more of graduate level studies or no later than his or her fourth semester in computer science at USC, he or she must apply for screening. The screening evaluation takes place during the regular review of Ph.D. students; based upon the student's performance in course work, overall record, and research potential, the screening evaluation determines whether or not the student will be allowed to continue toward the Ph.D. A screening determination of "pass," "no pass" or "postpone" is made; in the latter case, the student must reapply for screening the subsequent semester(s) until a "pass" or "no pass" determination is made.

Qualifying Exam Committee

After passing the screening procedure, the student must select a dissertation adviser and form a qualifying exam committee consisting of the dissertation adviser and at least four other faculty members. The committee must include a faculty member from another department who does not hold a joint appointment in computer science. All qualifying exam committees must be approved by the department chair and the Graduate School.

Course Requirements

Each Ph.D. student is expected to demonstrate breadth of knowledge as well as depth in a chosen area of concentration. Hence, the required courses fall into two groups: (1) a common core, required of all doctoral students, and (2) additional required courses which depend on the student's area of concentration. The common core consists of five courses selected from the following five groups. Students must complete one class from each group: *Group 1*: EE 557 Computer Systems Architecture, CSCI 551 Computer Communications, CSCI 555 Advanced Operating Systems; *Group 2*: CSCI 577a Software Engineering, CSCI 571 Web Technologies, CSCI 585 Database Systems; *Group 3*: CSCI 545 Robotics, CSCI 561 Foundation of Artificial Intelligence, CSCI 564 Brain Theory and Artificial Intelligence; *Group 4*: CSCI 574 Computer Vision, CSCI 580 Graphics and Rendering, CSCI 582 Geometric Modeling; *Group 5*: CSCI 670 Advanced Analysis of Algorithms, CSCI 581 Logic and its Applications, MATH 501 Numerical Analysis and Computation. A minimum GPA of 3.5 must be obtained in these five core courses.

In addition, all Ph.D. students must register for two semesters of CSCI 597 Seminar in Computer Science Research for a maximum of 2 units during their first year.

Ph.D. programs in computer science are grouped into the following specializations: Network and Systems (Interaction); Databases (Interaction); Software Engineering (Interaction); Robotics (Autonomy); Intelligent Agents and Organizations (Autonomy); Natural Language Processing (Autonomy); Graphics and Multimedia (Immersion); Vision (Immersion); Theory

of Computation: Genomic, Molecular and Quantum Computation (Computation); Brain Theory and Neural Networks (Computation); High Performance Computing and Parallel Computation (Computation).

Each student must select a specialization as his or her area of concentration. Each specialization requires a minimum of three additional courses. Specific specialization requirements (which may change as the fields change) will be provided to the students by the department.

Required courses may be taken in any chronological order, with due attention to prerequisites, and may precede or follow the Screening Evaluation.

A total of 60 units, at least 40 at the 500 level or above, beyond the bachelor's degree is required (including the above required courses). A minimum grade point average of 3.5 must be maintained. Students with a Master of Science degree may transfer up to 27 units.

Qualifying Examination

All doctoral students must pass a qualifying examination in computer science within four years before being admitted to candidacy. The qualifying examination tests the student's broad knowledge of computer science and deep insight into a chosen area of research.

Permission to take the qualifying examination must be obtained from the dean of graduate studies at least 60 days prior to its occurrence, and must be taken in the semester for which permission is granted. The qualifying exam committee administers the qualifying examination and evaluates the student's performance. If the examination is failed, the qualifying exam committee may recommend that the student repeat the examination 6–12 months later. The examination cannot be taken more than twice.

Dissertation

An acceptable dissertation based upon original research is required. The dissertation must show mastery of some special field, must be an original contribution to that field and must be presented in scholarly form.

Defense of the Dissertation

When all other requirements are satisfied, the candidate must pass a public final oral examination in defense of the dissertation.

Graduate Certificate in Engineering Technology Commercialization

See listing in the Special Educational Opportunities section, page 586xx.

Courses of Instruction

COMPUTER SCIENCE (CSCI)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

CSCI 101 Fundamentals of Computer Programming (3, FaSp) Introduction to the design of solutions to computer solvable problems. Algorithm design, solution implementation using a high-level programming language, program correctness and verification.

CSCI 102L Data Structures (3, FaSp) Linear lists, strings, arrays, and orthogonal lists; graphs, trees, binary trees, multilinked structures, sorting techniques; dynamic storage allocation; applications. *Prerequisite:* CSCI 101L.

CSCI 103L Introduction to Programming (3, FaSp) Basic datatypes, assignments, control statements (if, switch, for, while), input/output (printf, scanf, cin, cout), functions, arrays, structures, recursion, dynamic memory, file handling. Programming in C/C++. *Corequisite:* CSCI 109.

CSCI 104L Data Structures and Object Oriented Design (4, FaSp) Introduces the student to standard data structures (linear structures such as linked lists, (balanced) trees, priority queues, and hashtables), using the C++ programming language. *Prerequisite:* CSCI 103L and CSCI 109; *corequisite:* CSCI 170.

CSCI 106Lx Introduction to Computer Engineering/Computer Science (3, Fa) (Enroll in EE 106Lx)

CSCI 109 Introduction to Computing (3, FaSp) Computing as a discipline, a body of knowledge, and a domain of science/engineering concerned with information and its transformation.

CSCI 110 Introduction to Digital Logic (3) (Enroll in EE 101)

CSCI 120L Introduction to Programming for Computer Scientists (3, FaSp) Introduction to the field of Computer Science and Engineering: survey of major disciplines; foundations for using a high-level programming language to design solutions to computer solvable problems. Open only to: Computer Engineering and Computer Science, Computer Science, Computer Science (Games), Computer Science/Business Administration majors.

CSCI 170 Discrete Methods in Computer Science (4, FaSp) Sets, functions, series. Big-O notation and algorithm analysis. Propositional and first-order logic. Counting and discrete probability. Graphs and basic graph algorithms. Basic number theory. (Duplicates credit in CSCI 271.) *Prerequisite:* CSCI 103L and CSCI 109.

CSCI 180 Survey of Digital Games and Their Technologies (3, Fa) Historical, technical, and critical approach to the evolution of computer and video game architectures and game design, from its beginnings to the present day.

CSCI 200L Object-Oriented Programming (3, FaSp) The principles of object-oriented programming are examined using Java. Topics include graphics, graphical user interfaces and multi-threaded programming. (Duplicates credit in the former CSCI 105.) *Prerequisite:* CSCI 102.

CSCI 201L Principles of Software Development (4, FaSp) Object-oriented paradigm for programming-in-the-large in Java; writing sophisticated concurrent applications with animation and graphic user interfaces; using professional tools on team project. *Prerequisite:* CSCI 104L.

CSCI 270 Introduction to Algorithms and Theory of Computing (4, FaSp) Algorithm analysis. Greedy algorithms, divide and conquer, dynamic programming, graph algorithms. NP-completeness and basic recursion theory and undecidability. Sorting lower bounds. Number-theory based cryptography. (Duplicates credit in CSCI 303.) *Prerequisite:* CSCI 104L and CSCI 170.

CSCI 271 Discrete Methods in Computer Science (3, FaSp) Propositional and first-order logic; general proof techniques, proofs by induction; applications to program verification; counting/discrete probability; graphs, trees, other discrete structures; Basic algorithms and complexity. *Prerequisite:* CSCI 102, MATH 125.

CSCI 280 Video Game Production (4, FaSpSm) (Enroll in ITP 280)

CSCI 281 Pipelines for Games and Interactives (3, FaSp) Explores the aesthetic development/technical implementation necessary to achieve unique, compelling, intuitive visual design in games. Students will develop group visual game design portfolios.

CSCI 300 Introduction to Intelligent Agents Using Science Fiction (3, Fa) Fundamental concepts of intelligent agents and multiagent interactions using science fiction short stories and movie clips; topics include decision theory, game theory, auctions, swarms, teamwork, emotions. *Prerequisite:* CSCI 101L.

CSCI 303 Design and Analysis of Algorithms (3, FaSp) Upper and lower bounds on sorting and order median. Deterministic and random computation, data structures, NP-completeness, cryptography, Turing machines and undecidability. *Prerequisite:* CSCI 102 and CSCI 271.

CSCI 320 Digital Media Basics for Multimedia (3, FaSp) (Enroll in EE 320)

CSCI 351 Programming and Multimedia on the World Wide Web (3, Sp) HTML programming for creating home pages, installation and modification of Web server, writing programs that offer enhanced services, manipulation of graphics, video and sound. *Prerequisite:* CSCI 102L.

CSCI 352L Computer Organization and Architecture (3, Sp) (Enroll in EE 352L)

CSCI 357 Basic Organization of Computer Systems (3) (Enroll in EE 357)

CSCI 377 Introduction to Software Engineering (3) Introduction of principles, methods, techniques and tools for multi-person construction of multi-version software systems. *Prerequisite:* CSCI 102.

CSCI 380 Video Game Programming (4, FaSpSm) (Enroll in ITP 380)

CSCI 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

CSCI 402 Operating Systems (4, FaSpSm) Concurrency, deadlock control, synchronization, process and thread scheduling, memory management, file systems, security and access control, communication and networking, distributed file systems, data management. *Prerequisite:* CSCI 201L or CSCI 455x; EE 352L or EE 357.

CSCI 410x Translation of Programming Languages (3) Concepts of assemblers, compilers, interpreters and their design; macro assemblers, Polish notation and translation techniques; operator precedence parsing, push down automata, code generation. Not available for graduate credit to computer science majors. *Prerequisite:* CSCI 201; *corequisite:* EE 357.

CSCI 445 Introduction to Robotics (4, Fa) Designing, building and programming mobile robots; sensors, effectors, basic control theory, control architectures, some advanced topics, illustrations of state-of-the-art. Teamwork; final project tested in a robot contest. Junior standing or higher. *Prerequisite:* CSCI 101L or C language programming.

CSCI 450 Introduction to Computer Networks (3) (Enroll in EE 450)

CSCI 452L Game Hardware Architectures (3, Sp) (Enroll in EE 452L)

CSCI 454L Introduction to Systems Design Using Microprocessors (4) (Enroll in EE 454L)

CSCI 455x Introduction to Programming Systems Design (4, FaSp) Intensive introduction to programming principles, discrete mathematics for computing, software design and software engineering concepts. Not available for credit to computer science majors, graduate or undergraduate. *Prerequisite:* departmental approval.

CSCI 457 Computer Systems Organization (3) (Enroll in EE 457)

CSCI 458 Numerical Methods (4) (Enroll in MATH 458)

CSCI 459 Computer Systems and Applications Modeling Fundamentals (3, Sp) Techniques and tools needed to construct/evaluate models of computer systems and applications. Analytical and simulation methods, capacity planning, performance/reliability evaluation, and decision-making. *Prerequisite:* MATH 225, CSCI 201.

CSCI 460 Introduction to Artificial Intelligence (3, FaSp) Concepts and algorithms underlying the understanding and construction of intelligent systems. Agents, problem solving, search, representation, reasoning, planning, communication, perception, robotics, neural networks. Junior standing. *Prerequisite:* CSCI 102L or CSCI 455x.

CSCI 464 Foundations of Exotic Computation (3, Sp) Introduction to new approaches to computation: quantum — inspired by quantum mechanics; neural — inspired by the study of the brain; and molecular — inspired by the genome. *Prerequisite:* MATH 225 or MATH 245 or EE 241.

CSCI 465 Probabilistic Methods in Computer Systems Modeling (3) (Enroll in EE 465)

CSCI 477ab Design and Construction of Large Software Systems (2-2, FaSp) Programming methodologies; intra-group and inter-group communication; software lifecycle; software economics. A large software project is a central aspect of the course. *Prerequisite:* CSCI 201, CSCI 377.

CSCI 480 Computer Graphics (3, FaSp) Hardware for interactive graphic systems; picture representations; data structures for graphics; picture processing techniques; languages for graphics; survey of applications such as animation and simulation. *Prerequisite:* CSCI 102.

CSCI 485 File and Database Management (3, FaSp) File input/output techniques, basic methods for file organization, file managers, principles of databases, conceptual data models, and query languages. *Prerequisite:* CSCI 201.

CSCI 486 Serious Games Development (3, Fa) Develop applications of interactive technology that extend beyond the traditional videogame market: education, health, training, policy exploration, analytics, visualization, simulation, the arts and therapy. *Prerequisite:* CTIN 488; *corequisite:* ITP 485.

CSCI 487 Programming Game Engines (4, FaSp) (Enroll in ITP 485)

CSCI 490x Directed Research (1-8, max 12) Individual research and readings. Not available for graduate credit.

CSCI 491abL Final Game Project (4-2, FaSp) *a:* Design, iterative prototyping, and development of a first playable level. *Prerequisite:* CSCI 486. *b:* Design, iterative stage 2 prototyping and development of a refined game.

CSCI 492 Immersive Game Development (2, Sp) Design/develop 3D immersive games using advanced input devices, including sensors, video cameras, Wiimotes, accelerometer-inertial-magnetic sensor combinations, Microsoft Kinect systems, Sony Move, etc. *Recommended preparation:* CTIN 488, CSCI 480, and significant participation in a prior game development effort.

CSCI 495 Senior Project (3) (Enroll in PHYS 495)

CSCI 499 Special Topics (2-4, max 8) Selected topics in computer science.

CSCI 501 Numerical Analysis and Computation (3) (Enroll in MATH 501)

CSCI 502ab Numerical Analysis (3-3) (Enroll in MATH 502ab)

CSCI 503 Parallel Programming (3, Sp) Exploration of parallel programming paradigms, parallel computing architectures, hands-on parallel programming assignments, contemporary and historical examples and their impact, context with parallel algorithms. *Recommended preparation:* CSCI 102 or CSCI 455; EE 452 or EE 457.

CSCI 504ab Numerical Solutions of Ordinary and Partial Differential Equations (3) (Enroll in MATH 504ab)

CSCI 505ab Applied Probability (3-3) (Enroll in MATH 505ab)

CSCI 510 Software Management and Economics (3, Fa) Theories of management and their application to software projects. Economic analysis of software products and processes. Software cost and schedule estimation, planning and control. *Prerequisite:* graduate standing.

CSCI 511 Personal Software Process (PSP) and Project (3, Sp) Individual analysis, planning, development and maintenance of a software product or development artifact, using the principles and practices of PSP. Analysis of project's lessons learned.

CSCI 520 Computer Animation and Simulation (3, Sp) Fundamental techniques of computer animation and simulation, knowledge and/or experience in the design, scripting, production and post-production stages of computer animation. *Prerequisite:* CSCI 480.

CSCI 521 Optimization: Theory and Algorithms (3, Fa) (Enroll in ISE 520)

CSCI 522 Game Engine Development (4, Fa) The principles of developing game engines targeted at modern PC and game console hardware.

CSCI 523 Networked Games (3, Fa) Design and implementation of networked games, from the origins of the supporting technologies in distributed systems, visual simulations, networked virtual environments, and shipped games. *Recommended preparation:* CSCI 480, CSCI 580 or an equivalent course in graphics.

CSCI 524 Networked Artificial Intelligence (3, Sp) Networked game communication architectures, protocol development, architecting networked game AI clients/services. Character following, knowledge representation and reasoning, dynamic play strategies, search, learning, and planning. *Recommended preparation:* CSCI 480, CSCI 580 or an equivalent course in graphics.

CSCI 525 Advanced Game System Development (2, Sp) Topics include: game engine/tool development, AI/autonomous character integration, game networking, performance measurement/enhancement, character animation systems, mobile devices, game consoles, next generation gameplay. *Prerequisite:* CSCI 522 or CSCI 523 or CSCI 524 or CSCI 526 or CSCI 529b; *recommended preparation:* significant participation in a prior game development effort.

CSCI 526 Advanced Mobile Devices and Game Consoles (3, Sp) Explore the complex engineering process required to design and build a real-time graphics engine to support physical realism on mobile devices. *Recommended preparation:* CSCI 480, CSCI 580 or an equivalent course in graphics.

CSCI 529ab Advanced Game Projects (4-3, FaSp) a: Team projects intended to address the multifaceted technical and creative challenges that are inherent to comprehensive game development. *Recommended preparation:* CSCI 522 or CTIN 488. b: This course provides students in various areas of game specialization the practice of design, iterative stage 2 prototyping and development of a refined game.

CSCI 530 Security Systems (4, FaSp) Protecting computer networks and systems using cryptography, authentication, authorization, intrusion detection and response. Includes lab to provide practical experience working with such systems. *Prerequisite:* CSCI 402.

CSCI 531 Applied Cryptography (3, Fa) Intensive overview of cryptography for practitioners, historical perspective on early systems, number theoretic foundations of modern day cryptosystems and basic cryptanalysis.

CSCI 533 Combinatorial Analysis and Algebra (3) (Enroll in MATH 533)

CSCI 534 Affective Computing (3, Sp) Overview of the theory of human emotion, techniques for recognizing and synthesizing emotional behavior, and design application. *Prerequisite:* CSCI 561.

CSCI 536 Linear Programming and Extensions (3, Fa) (Enroll in ISE 536)

CSCI 537 Immersive Environments (3) Design and implementation of immersive environments, from the origins of the supporting technologies in visual simulation, to interactive 3-D graphics and interfaces, and interactive games. *Prerequisite:* CSCI 580.

CSCI 538 Human Performance Engineering (3) Tools and techniques for addressing issues related to Human Performance Engineering (HPE) of computing systems. *Prerequisite:* CSCI 537.

CSCI 541 Artificial Intelligence Planning (3, Irregular) Foundations and techniques of automated planning, including representations of actions and plans, approaches to planning, controlling search, learning for planning, and interaction with the environment. *Prerequisite:* CSCI 561.

CSCI 542 Neural Computation with Artificial Neural Networks (3, Sp) Computation and adaptation in networks of interconnected distributed processing units; classical and statistical approaches to neural nets; state-of-the-art neural network research. *Recommended preparation:* basic statistics, linear algebra.

CSCI 543 Software Multiagent Systems (3, Sp) Investigate computational systems in which several software agents or software agents and humans interact.

CSCI 544 Applied Natural Language Processing (3, Sp) Introduction to key components of human language technologies, including: information extraction, sentiment analysis, question answering, machine translation. *Recommended preparation:* proficiency in programming, algorithms and data structures, basic knowledge of linear algebra.

CSCI 545 Robotics (3, Sp) Fundamental skills for modeling and controlling of dynamic systems for robotic applications and graphics animations; control theory; kinematics; dynamics; sensor processing; real-time operating systems; robot labs. *Prerequisite:* C-programming, basic linear algebra, calculus.

CSCI 546 Intelligent Embedded Systems (3, Sp) Survey of techniques for the design of large-scale, distributed, networked, embedded systems. Examples include sensor/actuator networks, wearable computing, distributed robotics and smart spaces.

CSCI 547 Sensing and Planning in Robotics (3, Fa) Introduction to software methods in robotics including sensing, sensor fusion, estimation, fault tolerance, sensor planning, robot control architectures, planning and learning.

CSCI 548 Information Integration on the Web (3, Sp) Foundations and techniques in information integration as it applies to the Web, including view integration, wrapper learning, record linkage, and streaming data-flow execution. *Prerequisite:* CSCI 561, CSCI 585; *recommended preparation:* CSCI 571, CSCI 573.

CSCI 549 Nanorobotics (3, Sp) Introduction to nanotechnology. Nanorobotic systems: sensing; actuation and propulsion; control; communication; power; programming and coordination of robot swarms. Nanomanipulation and nanoassembly with atomic force microscopes. Graduate standing in science or engineering.

CSCI 551 Computer Communications (3, FaSp) Protocol design for computer communication networks, network routing, transport protocols, internetworking. *Prerequisite:* CSCI 402, EE 450 and C-language programming.

CSCI 552 Asynchronous VLSI Design (3) (Enroll in EE 552)

CSCI 553 Computational Solution of Optimization Problems (3) (Enroll in EE 553)

CSCI 554 Real Time Computer Systems (3) (Enroll in EE 554)

CSCI 555 Advanced Operating Systems (3, FaSp) Advanced issues in computer organization, naming, kernel design, protection mechanisms and security policies, reliable computing, data base OS, secure networks, systems specification, decentralized systems, real time systems. *Prerequisite:* CSCI 402.

CSCI 556 Introduction to Cryptography (3, Sp) Modern secret codes. Public key cryptosystems of Rivest-Shamir-Adelman, Diffie-Hellman and others. The underlying number theory and computational complexity theory. *Prerequisite:* CSCI 570 or CSCI 581.

CSCI 557 Computer Systems Architecture (3) (Enroll in EE 557)

CSCI 558L Internetworking and Distributed Systems Laboratory (3, FaSp) Students complete laboratory exercises in operating system and network management, distributed systems, TCP/IP, SNMP, NFS, DNS, etc. Term project required. *Prerequisite:* CSCI 402 and EE/CSCI 450; *recommended preparation:* CSCI 551 and CSCI 555.

CSCI 559 Mathematical Pattern Recognition (3-3) (Enroll in EE 559)

CSCI 560L Advanced Microcomputer-Based Design (3) (Enroll in EE 560L)

CSCI 561 Foundations of Artificial Intelligence (3, FaSp) Foundations of symbolic intelligent systems, search, logic, knowledge representation, planning, learning. *Recommended preparation:* good programming and algorithm analysis skills.

CSCI 564 Brain Theory and Artificial Intelligence (3, Fa) Introduces neural modeling, distributed artificial intelligence and robotics approaches to vision, motor control and memory. *Prerequisite:* graduate standing.

CSCI 565 Compiler Design (4, Sp) Formal grammar; parsing methods and lexical analysis; code generation; local and global code optimization; and dynamic allocation. *Prerequisite:* CSCI 455x.

CSCI 566 Neural Network Self-Organization (3, Sp) Differential equations for network pattern formation. Dynamic link architecture. Simulation of brain organization processes (retinotopy, orientation columns) and face recognition by elastic matching. *Recommended preparation:* CSCI 564 and either MATH 225 or MATH 245.

CSCI 567 Machine Learning (3, Fa) Statistical methods for building intelligent and adaptive systems that improve performance from experiences; focus on theoretical understanding of these methods and their computational implications. *Recommended preparation:* Undergraduate level training or course work in linear algebra, multivariate calculus, basic probability and statistics; an undergraduate level course in Artificial Intelligence may be helpful but is not required.

CSCI 568 Requirements Engineering (3, Fa) Techniques for successful requirements analysis and requirements engineering (RE) of software-intensive systems. Systematic process of developing requirements through cooperative problem analysis, representation, and validation.

CSCI 570 Analysis of Algorithms (3, FaSpSm) Explores fundamental techniques such as recursion, Fourier transform ordering, dynamic programming for efficient algorithm construction. Examples include arithmetic, algebraic, graph, pattern matching, sorting, searching algorithms.

CSCI 571 Web Technologies (3, FaSpSm) Advanced study of programming languages with application to the Web. Languages for client-side and server-side processing. Examples taken from: HTML, Java, JavaScript, Perl, XML and others. *Recommended preparation:* knowledge of at least two programming languages.

CSCI 572 Information Retrieval and Web Search Engines (3, Sp) Examines key aspects of information retrieval as they apply to search engines; web crawling, indexing, querying and quality of results are studied. *Prerequisite:* CSCI 351, CSCI 485.

CSCI 573 Probabilistic Reasoning (3, Fa) Reasoning under uncertainty, statistical directed and undirected graphical models, temporal modeling, inference in graphical models, parameter learning, decisions under uncertainty. *Recommended preparation:* An undergraduate level course in probability theory.

CSCI 574 Computer Vision (3, Fa) Description and recognition of objects, shape analysis, edge and region segmentation, texture, knowledge based systems, image understanding. *Prerequisite:* CSCI 455x.

CSCI 575 Wireless and Mobile Networks Design and Library (3) (Enroll in EE 579)

CSCI 576 Multimedia Systems Design (3, FaSp) State-of-the-art technology for networked multimedia systems such as: system design, I/O technologies, data management, data compression, networking and telecommunications. Design of real-world multimedia solution. *Recommended preparation:* familiarity with C or C++.

CSCI 577ab Software Engineering (4-4, FaSp) *a:* Software life cycle processes; planning considerations for product definition, development, test, implementation, maintenance. Software requirements elicitation and architecture synthesis. Team project. *b:* Software development, test, implementation, and maintenance methods. CASE tools and software environments. Software product engineering, configuration management, quality engineering, documentation. Application via projects. *Prerequisite:* *a:* graduate standing; *b:* CSCI 577a.

CSCI 578 Software Architectures (3, Sp) Study of concepts, principles and scope of software system architectures, including architectural styles, languages, connectors, middleware, dynamism, analysis, testing and domain-specific approaches.

CSCI 579ab Computational Molecular Biology (3-3, FaSp) (Enroll in MATH 578ab)

CSCI 580 3-D Graphics and Rendering (3, Fa) The process of creating images from 3-D models. Includes transformations, shading, lighting, rasterization, texturing, and other topics.

CSCI 581 Logic and its Applications (3) Formal systems, first order logic, truth, completeness, compactness, Godel incompleteness, recursive functions, undecidability. Selected applications, e.g., theorem proving, artificial intelligence, program verification, databases, computational complexity. *Prerequisite:* CSCI 430 and MATH 470.

CSCI 582 Geometric Modeling (3, Sp) Mathematical models and computer representations for three-dimensional solids; underlying topics from set theory, geometry, and topology. Fundamental algorithms; applications to CAD/CAM and robotics. *Prerequisite:* EE 441 and CSCI 102 or equivalent knowledge of linear algebra and data structures.

CSCI 583 Computational Geometry (3) Geometric algorithms from graphics, vision, geometric modeling, and optimization are studied in a unified way. Topics include proximity, motion planning, Voronoi diagrams, convex hulls. *Prerequisite:* CSCI 303.

CSCI 584 Control and Learning in Mobile Robots and Multi-Robot Systems (3, Fa) Survey of robot control and learning methods from technical papers. Control architectures, adaptation, learning, cooperation, distributed vs. centralized approaches, cooperative and competitive systems. *Prerequisite:* CSCI 445 or CSCI 460 or CSCI 547 or CSCI 561.

CSCI 585 Database Systems (3, FaSpSm) Database system architecture; conceptual database models; semantic, object-oriented, logic-based, and relational databases; user and program interfaces; database system implementation; integrity, security, concurrency and recovery. Open only to computer science graduate students.

CSCI 586 Database Systems Interoperability (3, Sp) Federated and multi-database systems, database networking, conceptual and schematic diversity, information sharing and exchange, knowledge discovery, performance issues. *Prerequisite:* CSCI 585.

CSCI 587 Geospatial Information Management (3, Fa) Techniques to efficiently store, manipulate, index and query geospatial information in support of real-world geographical and decision-making applications. *Prerequisite:* CSCI 485 or CSCI 585.

CSCI 588 Specification and Design of User Interface Software (3, Fa) The design and implementation of user interface software. Study of issues relating to human/computer interaction. Visual design and real-time interfaces.

CSCI 589 Software Engineering for Embedded Systems (3) Software engineering methods and techniques for embedded, resource constrained, and mobile environments. Applications to real-time operating systems and wireless networking systems. Class project. *Prerequisite:* CSCI 577a.

CSCI 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

CSCI 591ab Applied Software Engineering (3-3, Sp) *a:* Engineering software systems: negotiating goals; defining life cycle and process; project planning; defining requirements, architecture and design; incorporating COTS; analyzing project artifacts. *b:* Engineering software systems: design, implement, test and maintain software product; management of quality, configuration and transition. Open to Software Engineering Certificate Program students only. (Duplicates credit in CSCI 577ab.) *Recommended preparation:* experience in software development.

CSCI 592 Emerging Best Practices in Software Engineering (3, SpSm) Perspective and experiences with emerging best practices, including integrated maturity models, distributed and mobile software, RAD, agile methods, COTS, assessment and integration, portfolio and product line management. Open to Software Engineering Certificate Program students only. *Recommended preparation:* CSCI 510.

CSCI 593 Autonomous Learning and Discovery Agents (3) Active systems, using their own actions, percepts, and mental constructions, abstract a model from an unfamiliar environment in order to accomplish their missions. *Prerequisite:* CSCI 573.

CSCI 594abz Master's Thesis (2-2-0, FaSpSm) Credit on acceptance of thesis. Graded IP/CR/NC.

CSCI 595 Advanced Compiler Design (4) Code generation, data-flow analysis, global optimization, register allocation, data dependency analysis, unimodular transformations, vectorization, parallelization, data and computation decomposition. *Prerequisite:* CSCI 565.

CSCI 596 Scientific Computing and Visualization (3, Fa) Hands-on training on the basics of parallel computing and scientific visualization in the context of computer simulations in science and engineering. *Prerequisite:* CSCI 101L or CSCI 455x; CSCI 102L; MATH 458.

CSCI 597 Seminar in Computer Science Research (1, max 2, FaSp) Introduction of Ph.D. students to a broad range of computer science research. Two semesters registration required. Open to Computer Science doctoral students only.

CSCI 598 Mathematical Foundations for Computer-Aided Design of VLSI Circuits (3, Sp) (Enroll in EE 581)

CSCI 599 Special Topics (2-4, max 9) Course content to be selected each semester from recent developments in computer science.

CSCI 652 Low-Power Wireless Networks (3, Fa) (Enroll in EE 652)

CSCI 653 High Performance Computing and Simulations (3, Sp) Advanced high-performance computer simulation techniques; multiscale deterministic and stochastic simulation algorithms on parallel and distributed computing platforms; immersive and interactive visualization of simulation data. *Prerequisite:* CSCI 596 or CSCI 580.

CSCI 658 Diagnosis and Design of Reliable Digital Systems (3) (Enroll in EE 658)

CSCI 662 Advanced Natural Language Processing (3, Fa) Computational models of natural language. Formalisms for describing structures of human language, and algorithms for learning language structures from data. (Duplicates credit in former CSCI 562.) *Recommended preparation:* Proficiency in programming, algorithms and data structures, discrete math, probability theory, and calculus.

CSCI 664 From Action to Language (3, Sp) Analysis of neurocomputational processes linking action, perception, emotion and language within an evolutionary framework integrating data from neuroscience, primatology, human psychology and linguistics. *Recommended preparation:* graduate standing with background or strong interest in one of linguistics, computational neuroscience (e.g., CSCI 564), robotics, or emotion.

CSCI 670 Advanced Analysis of Algorithms (3, FaSp) Fundamental techniques for design and analysis of algorithms. Topics include: dynamic programming; network flows; theory of NP-completeness; linear programming; approximation, randomized, and online algorithms; basic cryptography. *Prerequisite:* CSCI 570; *recommended preparation:* familiarity with algorithms and discrete mathematics.

CSCI 671 Randomized Algorithms (3, Sp) Standard techniques in the design and analysis of randomized algorithms and random structures. Topics include tail bounds, Markov Chains, VC-dimension, probabilistic method. *Prerequisite:* CSCI 570 or CSCI 670; *recommended preparation:* basic background in probability.

CSCI 672 Approximation Algorithms (3, Sp) Algorithmic techniques include combinatorial algorithms and rounding of linear and semi-definite programs. Applications include network design, graph cuts, covering problems, and approximation hardness. *Prerequisite:* CSCI 570 or CSCI 670; *recommended preparation:* basic background in probability and linear algebra.

CSCI 673 Structure and Dynamics of Networked Information (3, Sp) Algorithms for analyzing network data and spreading information over networks. Focuses on broadly applicable mathematical tools and techniques, including spectral techniques, approximation algorithms and randomization. *Prerequisite:* CSCI 570 or CSCI 670; *recommended preparation:* basic background in probabilities, linear algebra.

CSCI 674ab Advanced Topics in Computer Vision (3-3) Selected topics from current active research areas including image segmentation, shape analysis and object recognition, inference of 3-D shape, motion analysis, knowledge-based system, neural nets. *Prerequisite:* CSCI 574.

CSCI 675 Topics in Engineering Approaches to Music Cognition (3, max 6) (Enroll in ISE 575)

CSCI 685 Advanced Topics in Database Systems (3, Sp) Advanced techniques in database management. Topics include optimization, cache management, data mining and knowledge discovery, decision support, spatial indexes, parallel and distributed systems, extendible storage. *Prerequisite:* CSCI 485 or CSCI 585.

CSCI 686 Advanced Big Data Analytics (3) Advanced statistical inference and data mining techniques for data analytics, including: topic modeling, structure learning, time-series analysis, learning with less supervision, and massive-scale data analytics. *Recommended preparation:* CSCI 567, CSCI 573 or EE 559.

CSCI 694ab Topics in Computer Networks and Distributed Systems (3-3) Current topics in network and distributed systems; verbal and written presentation skills, effective critiquing, and evaluation. *Prerequisite:* CSCI 551 or CSCI 555.

CSCI 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

CSCI 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC.

Ming Hsieh Department of Electrical Engineering

Electrical Engineering-Systems
Hughes Aircraft Electrical
Engineering Center 100
(213) 740-4446
FAX: (213) 740-4449
Email: studentinfo@ee.usc.edu

Electrical Engineering-Electrophysics
Powell Hall of Information Sciences and
Engineering 604
(213) 740-7874
FAX: (213) 740-8677
Email: eepdept@usc.edu

Co-Chairs: Sandeep Gupta, Ph.D. (Systems); Eun Sok Kim, Ph.D. (Electrophysics)
Associate Chair (Systems): Bhaskar Krishnamachari, Ph.D.
Associate Chair (Curriculum and Student Services): Edward W. Maby, Ph.D.

Faculty

Presidential Chair: Andrew J. Viterbi, Ph.D.

Presidential Chair: Simon Ramo, Ph.D.

Kenneth C. Dahlberg Early Career Chair: Rahul Jain, Ph.D.

William M. Keck Chair in Engineering: P. Daniel Dapkus, Ph.D.

Robert G. and Mary G. Lane Early Career Chair: Murali Annavaram, Ph.D.

Fred W. O'Green Chair in Engineering: Leonard M. Silverman, Ph.D.

Robert C. Packard President's Chair and Malcolm R. Currie Chair in Technology and the Humanities: C. L. Max Nikias, Ph.D.

Colleen and Roberto Padovani Early Career Chair in Electrical Engineering: Alexandros G. Dimakis, Ph.D.

George T. Pflieger Chair in Electrical Engineering: Robert W. Hellwarth, Ph.D.

Charles Lee Powell Chair in Electrical Engineering and Computer Science: Melvin Breuer, Ph.D.

Charles Lee Powell Chair in Engineering: Viktor Prasanna, Ph.D.

Steven and Kathryn Sample Chair in Engineering: Alan E. Willner, Ph.D.

Leonard Silverman Chair: Alexander A. Sawchuk, Ph.D.

Andrew and Erna Viterbi Chair in Communications: Solomon W. Golomb, Ph.D.

WISE Junior Gabilan Chair: Michelle Povinelli, Ph.D.

Fred H. Cole Professor of Electrical Engineering: Robert A. Scholtz, Ph.D.

William M. Hogue Professor of Electrical Engineering: William H. Steier, Ph.D.

Stephen and Etta Varra Professorship: Massoud Pedram, Ph.D.

Viterbi Professorship in Engineering: Shrikanth (Shri) Narayanan, Ph.D.

Ming Hsieh Faculty Fellow in Electrical Engineering:
Hossein Hashemi, Ph.D.

Ming Hsieh Faculty Fellow in Electrical Engineering:
Bhaskar Krishnamachari, Ph.D.

Professors: Melvin Breuer, Ph.D.* (*Computer Science*); Giuseppe Caire, Ph.D.; John Choma, Ph.D.*; Keith M. Chugg, Ph.D.; P. Daniel Dapkus, Ph.D. (*Materials Science*); Michel Dubois, Ph.D.; Solomon W. Golomb, Ph.D. (*Mathematics*); Martin Gundersen, Ph.D. (*Materials Science, Physics*); Sandeep Gupta, Ph.D.; Robert W. Hellwarth, Ph.D. (*Physics*); Kai Hwang, Ph.D. (*Computer Science*); Petros Ioannou, Ph.D.; B. Keith Jenkins, Ph.D.; Edmond Jonckheere, Ph.D. (*Mathematics*); Eun Sok Kim, Ph.D.; Bart Kosko, Ph.D. (*Law*); Chung-Chieh Kuo, Ph.D. (*Computer Science*); Richard Leahy, Ph.D.* (*Biomedical Engineering, Radiology*); Anthony F. J. Levi, Ph.D. (*Physics*); Daniel Lidar, Ph.D. (*Chemistry*); William C. Lindsey, Ph.D.; Jerry M. Mendel, Ph.D.; Urbashi Mitra, Ph.D.; Mahta Moghaddam, Ph.D.; Andreas Molisch, Ph.D.; Shrikanth (Shri) Narayanan, Ph.D. (*Computer Science, Linguistics, Psychology*); C. L. Max Nikias, Ph.D.; John O'Brien, Ph.D.; Antonio Ortega, Ph.D.; Alice C. Parker, Ph.D.*; Massoud Pedram, Ph.D.; Timothy Pinkston, Ph.D.; Viktor Prasanna, Ph.D. (*Computer Science*); C. Raghavendra, Ph.D. (*Computer Science*); Simon Ramo, Ph.D.; Michael J. Safonov, Ph.D.; Steven B. Sample, Ph.D.; Alexander A. Sawchuk, Ph.D.*; Robert A. Scholtz, Ph.D.; Leonard Silverman, Ph.D.; John Silvester, Ph.D.; John B. Slaughter, Ph.D. (*Education*); William H. Steier, Ph.D.; Armand R. Tanguay Jr., Ph.D. (*Biomedical Engineering, Materials Science*); Andrew J. Viterbi, Ph.D.; Alan E. Willner, Ph.D.*; Zhen Zhang, Ph.D.; Chongwu Zhou, Ph.D.

Associate Professors: Murali Annavaram, Ph.D. (*Computer Science*); Peter Beerel, Ph.D.; Todd Brun, Ph.D. (*Computer Science, Physics*); Stephen B. Cronin, Ph.D.; Hossein Hashemi, Ph.D.; Rahul Jain, Ph.D. (*Industrial and Systems Engineering*); Bhaskar Krishnamachari, Ph.D. (*Computer Science*); Christos Kyriakakis, Ph.D.; Krishna Nayak, Ph.D. (*Biomedical Engineering, Medicine*); Michael Neely, Ph.D.; Aluizio Prata Jr., Ph.D.*; Konstantinos Psounis, Ph.D. (*Computer Science*); Wei Wu, Ph.D.

Assistant Professors: Paul Bogdan, Ph.D.; Michael Shuo-Wei Chen, Ph.D.; Alexandros G. Dimakis, Ph.D.; Panayiotis Georgiou, Ph.D.; Justin Haldar, Ph.D.; Michelle Povinelli, Ph.D.; Benjamin W. Reichardt, Ph.D.

Adjunct Professors: Dan Goebel, Ph.D.; Patric Muggli, Ph.D.

Adjunct Associate Professors: Serge Dubovitsky, Ph.D.; Edgar Satorius, Ph.D.; Ali A. Zahid, M.S.

Research Professors: Michael Fritze, Ph.D.; Preston Marshall, Ph.D.

Research Associate Professors: Jeffrey Draper, Ph.D.; John Granacki, Ph.D. (*Biomedical Engineering*); Chunqi Jiang, Ph.D.; Joseph Touch, Ph.D. (*Computer Science*); P. Thomas Vernier, Ph.D.

Research Assistant Professors: Sergio Boixo, Ph.D.; Anand Joshi, Ph.D.; Sungbok Lee, Ph.D.; Bindu Madhavan, Ph.D.; Yogesh Simmhan, Ph.D.; John Stang, Ph.D.; Alireza Tabatabaenejad, Ph.D.

Professors of Engineering Practice: Mary Eshaghian-Wilner, Ph.D.; Edward W. Maby, Ph.D.; Gandhi Puvvada, M.S.; Monte Ung, Ph.D.

Associate Professors of Engineering Practice: Mohammed Beshir, Ph.D.; Mark Redekopp, M.S.

Senior Lecturer: Douglas Burke, Ph.D.

Lecturers: Shahin Nazarian, Ph.D.; Satsuki Takahashi, Ph.D.

Emeritus Professors: Alvin Despain, Ph.D.; Hans H. Kuehl, Ph.D.*; Charles L. Weber, Ph.D.; Lloyd Welch, Ph.D. (*Mathematics*)

Emeritus Instructor: Sidney A. Wielin, B.S.

Research Professor Emeritus of Electrical Engineering: Sanjit Mitra, Ph.D.

Joint Faculty

Joint Professors: Michael Arbib, Ph.D. (*Computer Science, Neurobiology, Biomedical Engineering*); Stanley P. Azen, Ph.D. (*Preventive Medicine and Biomedical Engineering*); Jack Feinberg, Ph.D. (*Physics*); Leana Golubchik, Ph.D. (*Computer Science*); Ramesh Govindan, Ph.D. (*Computer Science*); Norberto Grzywacz, Ph.D. (*Biomedical Engineering*); Tomlinson Holman, B.S. (*Cinematic Arts*); Ellis Horowitz, Ph.D. (*Computer Science*); Vasilis Z. Marmarelis, Ph.D. (*Biomedical Engineering*); Gerard Medioni, Ph.D. (*Computer Science*); Ulrich Neumann, Ph.D. (*Computer Science*); Ramakant Nevatia, Ph.D. (*Computer Science*); Si-Zhao Qin, Ph.D. (*Chemical Engineering*); Aristides Requicha, Ph.D. (*Computer Science*); Cyrus Shahabi, Ph.D. (*Computer Science*); Gaurav Sukhatme, Ph.D. (*Computer Science*); William G. Wagner, Ph.D. (*Physics*); Curt F. Wittig, Ph.D. (*Chemistry, Physics*); Stanley M. Yamashiro, Ph.D. (*Biomedical Engineering*)

Joint Associate Professors: Elaine Chew, Ph.D. (*Industrial and Systems Engineering*); Jia Grace Lu, Ph.D., (*Physics*); Ellis Meng (*Biomedical Engineering*)

Joint Assistant Professors: Andrea M. Armani, Ph.D. (*Chemical Engineering and Materials Science*); Benham Jafarpour, Ph.D. (*Chemical Engineering, Materials Science*); Jongseung Yoon, Ph.D. (*Chemical Engineering, Materials Science*)

Joint Research Professor: Fred Aminzadeh, Ph.D. (*Chemical Engineering, Materials Science*)

Joint Research Assistant Professors: Young Cho, Ph.D. (*Computer Science*); Houchun Harry Hu, Ph.D. (*Radiology*)

Joint Emeritus Professors: George A. Bekey, Ph.D. (*Computer Science, Biomedical Engineering*); Murray Gershenzon, Ph.D.* (*Materials Science*)

*Recipient of university-wide or school teaching award.

Electrical Engineering Honor Society: Eta Kappa Nu

Degree Requirements

Educational Program Objectives

The electrical engineering program objectives are designed to promote technical competence, professional development, and citizenship in the global community.

Technical Competence

Graduates will apply their technical skills in mathematics, science and engineering to the solution of complex problems encountered in modern electrical engineering practice.

Graduates will model, analyze, design and experimentally evaluate components or systems that achieve desired technical specifications subject to the reality of economic constraints.

Professional Development

Graduates will compete effectively in a world of rapid technological change and assume leadership roles within industrial, entrepreneurial, academic or governmental environments in the broad context of electrical engineering.

Some graduates who choose to redirect their careers will be employed in diverse fields such as healthcare, business, law, computer science, multimedia and music through graduate-level studies and the process of lifelong learning.

Citizenship in the Global Community

Graduates will use their communication skills to function effectively both as individuals and as members of multidisciplinary and multicultural teams in a diverse global economy.

Graduates will engage in highly ethical and professional practices that account for the global, environmental and societal impact of engineering decisions.

Bachelor of Science in Electrical Engineering

The requirement for the degree is 131 units. A cumulative grade point average of C (2.0) is required for all courses taken at USC as well as all upper division courses applied towards the major, regardless of the department in which the courses are taken. See also the common requirements for undergraduate degrees section, page 569xx.

COMPOSITION/WRITING REQUIREMENTS		UNITS
WRIT 140*	Writing and Critical Reasoning	4
WRIT 340	Advanced Writing	3

GENERAL EDUCATION (SEE PAGE 63XX)		UNITS
General education* +		20

PRE-MAJOR REQUIREMENTS		UNITS
<i>Math Requirement</i>		
MATH 125	Calculus I	4
MATH 126	Calculus II	4

MATH 226	Calculus III	4
MATH 245	Mathematics of Physics and Engineering I	4
MATH 445	Mathematics of Physics and Engineering II	4

Physics Requirement

PHYS 151L**	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4
PHYS 153L	Fundamentals of Physics III: Optics and Modern Physics	4

Chemistry Elective

CHEM 105aL	General Chemistry, or	
CHEM 115aL	Advanced General Chemistry, or	
MASC 110L	Materials Science	4

MAJOR REQUIREMENTS**UNITS***Engineering*

ENGR 102	Engineering Freshman Academy	2
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Computer Science

EE 355x	Software Design for Engineers	3
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Electrical Engineering

EE 101	Introduction to Digital Logic	3
EE 105	Introduction to Electrical Engineering	3
EE 150L	Engineering Computational Methods	3
EE 202L	Linear Circuits	4
EE 301L	Linear Systems	4
EE 330	Electromagnetics I	3
EE 364	Introduction to Probability and Statistics for Electrical Engineering and Computer Science, or	
EE 464	Probability Theory for Engineers	3

Industrial and Systems Engineering

ISE 460	Engineering Economy, or	
BUAD 301	Technical Entrepreneurship	3

MAJOR ELECTIVES**UNITS**

Electives	See requirements for graduation	37
Total units:		131

*GE Category VI is taken concurrently with WRIT 140.

**Satisfies GE Category III requirement.

*The university allows engineering majors to replace the GE Category IV with a second course in Categories I, II or VI.

Requirements for Graduation: Engineering Electives Entry-Level Electives

Students are required to take four entry-level electives from the following list: EE 201L (4), EE 241 (3), EE 322 (3), EE 337L (3), EE 338 (3), EE 348L (4), EE 357 (3).

Advanced Electives

Students must fulfill a minimum requirement of three 400-level elective courses in electrical engineering. Of these, one must be a capstone design course from the following list: EE 422x (3), EE 423Lx (3), EE 434Lx (4), EE 447Lx (4), EE 459Lx (3), EE 484x (3).

Free Electives

Free elective courses that complete the 37-unit elective requirement are to be chosen in consultation with the student's academic adviser. Students are encouraged to pursue minor options when satisfying this requirement.

Bachelor of Science in Computer Engineering and Computer Science

See the listing under Computer Engineering, page 634xx.

Minor in Music Recording

A minor in music recording is offered through the USC Thornton School of Music to provide undergraduate students with the background necessary to enter the field of recording engineering and to familiarize them with the design needs of modern recording equipment. The minor is recommended to electrical engineering majors with extensive musical training who would like to combine their technical and musical abilities while learning the engineering applications of physical and mathematical principles to the art of music recording. See the listing under the Thornton School of Music, page 817xx.

Minor in Engineering Technology Commercialization

See listing in the Special Educational Opportunities section, page 581xx.

Master of Science in Electrical Engineering

A minimum grade point average of 3.0 must be earned on all course work applied toward the master's degree in electrical engineering. This average must also be achieved on all 400-level and above course work attempted at USC beyond the bachelor's degree and through an accumulation of no more than 45 units. Transfer units count as credit (CR) toward the master's degree and are not computed in the grade point average.

In addition to the general requirements of the Viterbi School of Engineering, the Master of Science in electrical engineering is also subject to the following requirements: (1) a total of at least 27 units is required; (2) every non-EE course for graduate credit requires prior written adviser approval recorded each semester on a special request form in the student's department file; (3) no more than three courses (maximum 12 units) may be counted at the 400 level — at least 18 adviser-approved units must be taken at the 500 or 600 level; (4) at least 18 units must be taken in electrical engineering, those not in EE require written adviser approval and must be technical in nature; (5) to achieve a degree of breadth in their program, students are encouraged to take two technical courses outside their area of specialization but within EE; (6) at least 21 of the 27 units must be taken in the Viterbi School of Engineering; (7) units to be transferred (maximum four with adviser approval) must have been taken prior to taking classes at USC — interruption of residency is not allowed.

The aerospace controls option is available as an area of emphasis for MSEE students interested in learning to apply innovative control techniques to aerospace control problems. In addition to 18 approved units of electrical engineering courses, students in this option will take at least three of the following aerospace and mechanical engineering courses: AME 453 Engineering Dynamics (3); AME 531 Aerodynamics of Wings and Bodies (3); AME 532ab Flight Vehicle Stability and Control (3-3); AME 525 Engineering Analysis (3); AME 526 Engineering Analytical Methods (3); ASTE 580 Orbital Mechanics I (3).

Master of Science in Electrical Engineering (Computer Networks)

Under the computer networks option students must satisfy the M.S., Electrical Engineering requirements with the exception that only 15 units of EE are required. It is expected that each student in this program will take or have taken the equivalent of three of the four following fundamental courses: CSCI 402x, EE 450, EE 457Lx, and EE 465. The fundamental courses may also be satisfied by having passed EE placement exams. Three of the following courses are required: CSCI 551, EE 550, EE 555, and EE 597. If a fourth required course is taken it can be counted toward elective credit. Suggested elective courses include: CSCI 530, CSCI 555, CSCI 558L, CSCI 570, CSCI 694a, CSCI 694b, EE 512, EE 532, EE 535, EE 549, EE 554, EE 557, EE 558, EE 579, EE 590, EE 649, EE 650, EE 652, EE 659. Any other course must be approved by a faculty adviser. Total units required for the degree is 27.

Master of Science in Electrical Engineering (Electric Power)

See listing in the Sustainable Infrastructures Systems section, page 681xx.

Master of Science in Electrical Engineering (Multimedia and Creative Technologies)

See listing under Multimedia and Creative Technologies, page 678xx.

Master of Science in Systems Architecting and Engineering

See the listing under Systems Architecting and Engineering, page 682xx.

Master of Science in Electrical Engineering (Telecommunications)

See Sustainable Infrastructures Systems, page 681xx.

Master of Science in Electrical Engineering (VLSI Design)

The Master of Science in Electrical Engineering (VLSI design) is earned by successfully completing the normal requirements for the Master of Science in electrical engineering, with the following additional required courses: EE 536a; EE 577a; EE 577b or EE 536b; and EE 552. If a student chooses to take EE 536b as well as EE 577b, the student may either count EE 536b as one of the courses for Area 2 or EE 577b as one of the courses for Area 1 or Area 3. No more than three courses (maximum 12 units) may be counted at the 400 level — at least 18 adviser-approved units must be taken at the 500 or 600 level.

The students must also take two courses from one of the following areas and one course from a second area:

- Area 1: CSCI 455x, EE 560, EE 577b (see above), EE 658, EE 680 and EE 681.
- Area 2: EE 448L, EE 504L, EE 536b (see above), EE 537 and EE 630.
- Area 3: CSCI 455x, CSCI 570, EE 557, EE 560, EE 577b (see above), EE 659 and EE 677.

With explicit approval of a faculty adviser, EE 599 Special Topics and/or 3 units of EE 590 Directed Research may be used to meet requirements for any of the approved areas.

The remaining courses must be technical electives approved by the adviser, and can include the following: EE 501, EE 502, EE 504L, EE 506, EE 540, EE 554, EE 560, EE 590, EE 601 and EE 677.

Master of Science in Electrical Engineering (Wireless Health Technology)

The Master of Science in Electrical Engineering (Wireless Health Technology) reflects a partnership between the Viterbi School of Engineering, the Keck School of Medicine, and other institutions engaged in health care research. The program of study features targeted engineering courses, a rigorous exposure to general medicine, and relevant internship practice (a total of 38 units).

REQUIRED COURSES (28 UNITS)		UNITS
EE 450	Introduction to Computer Networks	3
EE 535	Mobile Communications	3
EE 562a	Random Processes in Engineering	3
EE 579	Wireless and Mobile Networks Design and Laboratory	3
MEDS 530abc	Foundations of Medicine, Anatomy, Physiology, and Pathology	12
MEDS 597ab	Health Technology Internship	4
Take two electrical engineering electives from the following list (6 units):		
CSCI 545	Robotics	3
CSCI 561	Foundations of Artificial Intelligence	3
EE 519	Speech Recognition and Processing for Multimedia	3
EE 550	Design and Analysis of Computer Communication Networks	3
EE 559	Mathematical Pattern Recognition	3
EE 564	Communication Theory	3
EE 565a	Information Theory	3
EE 567	Communication Systems	3

Take one global health elective from the following list (4 units)

MEDS 500	Basic Concepts in Global Health	4
MEDS 501	Critical Issues in Global Health	4
MEDS 502	Global Epidemiology of Diseases and Risk Factors	4
Total:		38 units

Students are expected to have a background in probability equivalent to EE 464 or EE 465; a background in linear algebra equivalent to EE 441; and experience with a programming language such as C or C++. Admitted students who do not meet prerequisites by placement examination will be assigned courses to complete the deficiencies.

Financial Engineering Electrical Engineering Building 100

(213) 740-4447

FAX: (213) 740-4449

Email: eesystem@usc.edu

Faculty Contact: Professor Petros Ioannou,
ioannou@usc.edu

Master of Science in Financial Engineering

The objective of this program is the training of graduate students with engineering, applied mathematics or physics backgrounds in the application of mathematical and engineering tools to finance. Financial engineering is a multidisciplinary education program that involves the Viterbi School of Engineering, the USC Marshall School of Business and the USC Dornsife College of Letters, Arts and Sciences (Department of Economics). Financial engineering uses tools from finance and economics, engineering, applied mathematics and statistics to address problems such as derivative securities valuation, strategic planning and dynamic investment strategies, and risk management, which are of interest to investment and commercial banks, trading companies, hedge funds, insurance companies, corporate risk managers and regulatory agencies.

A minimum grade point average of 3.0 must be earned on all course work applied toward the master's degree in financial engineering. Transfer units count as credit (CR) toward the master's degree and are not computed in the grade point average. In addition to the general requirements of the Viterbi School of Engineering, the Master of Science in financial engineering is also subject to the following requirements: (1) a total of at least 27 units is required, 18 of which have to be from the Viterbi School of Engineering; (2) every plan of study requires prior written approval by the contact faculty of the program; (3) units to be transferred (maximum of four with adviser approval) must have been taken prior to taking classes at USC; interruption of residency is not allowed.

Curriculum

Students are expected to have a background in probability at the level of USC's EE 465 and linear algebra at the level of USC's EE 441. Admitted students who do not meet prerequisites by placement examination will be assigned courses to complete the deficiencies.

The degree requirements are minimum of 27 units (18 units have to be from the School of Engineering) which corresponds to nine, three-unit courses. Three of the courses are required and the other six are electives from a restricted list of courses:

REQUIRED		UNITS
GSBA 548	Corporate Finance	3
ISE 563	Financial Engineering	3
EE 512	Stochastic Processes	3

ELECTIVES (ADVISER APPROVED) UNITS

Finance, Business, Economics Area:

Two courses (6 units) from the following:

ECON 500	Microeconomic Analysis and Policy	4
ECON 501	Macroeconomic Analysis and Policy	4
ECON 613	Econometric and Financial Time Series I	4
FBE 529	Financial Analysis and Valuation	3
FBE 535	Applied Finance in Fixed Income Securities	3
FBE 543	Forecasting and Risk Analysis	3
FBE 554	Trading and Exchanges	3
FBE 555	Investment Analysis and Portfolio Management	3
FBE 559	Management of Financial Risk	3
FBE 589	Mortgages and Mortgage-Backed Securities and Markets	3
ISE 566	Financial Accounting Analysis for Engineering	3

Optimization, Simulations, Stochastic Systems:

Three courses (9 units) from the following:

CE 645	Uncertainty Modeling and Stochastic Optimization	3
CSCI 570	Analysis of Algorithms	3
EE 464	Probability Theory for Engineers	3
EE 465	Probabilistic Methods in Computer Systems Modeling	3
EE 517	Statistics for Engineers	3
EE 553*	Computational Solution of Optimization Problems	3
EE 556	Stochastic Systems and Finance	3
EE 562a	Random Processes in Engineering	3
ISE 520*	Optimization: Theory and Algorithms	3
ISE 536	Linear Programming and Extensions	3
ISE 538	Elements of Stochastic Processes	3
ISE 539	Stochastic Elements of Simulation	3

*Students cannot receive credit for both ISE 520 and EE 553

Systems and Control Area:

One course (3 units) from the following:

AME 541*	Linear Control Systems II	3
EE 500	Neural and Fuzzy Systems	3
EE 585*	Linear System Theory	3
EE 587	Nonlinear and Adaptive Control	3
EE 588	Linear Quadratic Control	3

*Students cannot receive credit for both EE 585 and AME 541

Second Master's Degree

A graduate student who already holds a master's degree from USC may apply up to four units toward a second master's degree with the permission of the chair of the major department. All credit, including the transferred units, must be earned within seven calendar years.

For students who earned their first master's degree at another institution, no course work may be repeated from the first program of study and no unit credit from the first program of study may be counted toward the second master's degree.

Engineer in Electrical Engineering

Requirements for the Engineer in electrical engineering are the same as those listed under Engineer degree, except that both areas of concentration must be in electrical engineering.

Doctor of Philosophy in Electrical Engineering

The Doctor of Philosophy with a major in electrical engineering is awarded in strict conformity with the general requirements of the USC Graduate School. See general requirements for graduate degrees. Departmental requirements for this degree consist of a concentrated program of study and research and a dissertation. Each student wishing to undertake a doctoral program must first be admitted to the program and then take the screening examination. This examination will emphasize comprehension of fundamental material in one of the 13 specialized areas of electrical engineering listed below. Listed under each area are courses offered by the Department of Electrical Engineering which will provide basic background for the examination and partial preparation for the dissertation. Not all courses listed are required for preparation for the screening examination in any specific area. Consult a separately published guide, available from the department office, for more information concerning examination content and scheduling. Further guidance concerning the full completion of courses, including those given outside the department, which are recommended for preparation for the dissertation, can be obtained from the faculty in each technical area.

Major Fields in Electrical Engineering — Electrophysics

Students may major in the following fields: Electromagnetics-EE 570ab, EE 571ab, EE 572ab, EE 573ab, EE 576, EE 578, EE 604; Plasma Science-EE 539, EE 570ab, EE 572ab; Power and Machinery-EE 510, EE 521, EE 524, EE 525; Quantum Electronics-EE 529, EE 530, EE 531, EE 539, EE 540; Solid State-EE 501, EE 502, EE 504L, EE 506, EE 507, EE 508, EE 537, EE 601, EE 604, EE 606, EE 607; Integrated Circuits-EE 471, EE 501, EE 504L, EE 506, EE 536ab, EE 537, EE 540, EE 569, EE 577, EE 585, EE 601, EE 604, EE 605, EE 606, EE 630; Optics-EE 529, EE 530, EE 531, EE 539, EE 540, EE 559, EE 566, EE 569, EE 589, EE 642, EE 669.

Major Fields in Electrical Engineering — Systems

Students may major in the following fields: Biomedical Engineering and Biomathematics-EE 593; Communication Theory-EE 535, EE 550, EE 551, EE 562ab, EE 563, EE 564, EE 565ab, EE 566, EE 567, EE 568, EE 569, EE 583, EE 595, EE 664, EE 666, EE 667, EE 669; Computer Engineering-CSCI 561, EE 532, EE 545, EE 547, EE 548, EE 549, EE 550, EE 552, EE 553, EE 554, EE 555, EE 557, EE 560, EE 574, EE 577ab, EE 578, EE 579, EE 650, EE 653, EE 657, EE 658, EE 677, EE 680, EE 681 (see program listing for the Master of Science in Computer Engineering); Intelligent Systems-EE 559, CSCI 561, CSCI 574; Signal

Processing-EE 500, EE 517, EE 519, EE 522, EE 559, EE 562a, EE 566, EE 569, EE 583, EE 586L, EE 589, EE 591, EE 592, EE 596, EE 619, EE 669; Systems and Controls-EE 553, EE 563, EE 585, EE 586, EE 587, EE 588, EE 593.

Graduate Certificate in Engineering Technology Commercialization

See listing in the Special Educational Opportunities section, page 586xx.

Courses of Instruction

ELECTRICAL ENGINEERING (EE)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

EE 101 Introduction to Digital Logic (3, FaSp) Boolean algebra; number systems; Boolean function synthesis; binary arithmetic; codes; combinational logic devices; sequential circuits; state machine design and implementation.

EE 105 Introduction to Electrical Engineering (3, Fa) Gateway to the majors in Electrical Engineering. An overview of modern electrical engineering: communications, computers, circuits, components, controls, electromagnetics, microelectronics; principles of commercial products such as FAX, modem, copier, CD-ROM, ATM networks.

EE 106L Introduction to Computer Engineering/Computer Science (2, Fa) Examination of key disciplines of computing systems: architecture, operating systems, digital logic, VLSI, networks, AI, robotics, graphics, and algorithms. Includes hardware/software laboratory tours and exercises. Open only to B.S., Computer Engineering and Computer Science and B.S., Computer Science majors.

EE 120L Introduction to Programming for Computer Scientists (3, FaSp) (Enroll in CSCI 120L)

EE 150L Engineering Computational Methods (3, Fa) Algorithms and computational methods for efficient solution of engineering problems. Introduction to engineering software tools.

EE 201L Introduction to Digital Circuits (4, FaSp) Digital system design and implementation; synchronous design of datapath and control; schematic/Verilog-based design, simulation, and implementation in Field Programmable Gate Arrays; timing analysis; simple CPU design. *Prerequisite:* EE 101.

EE 202L Linear Circuits (4, FaSpSm) Lumped circuit elements; network equations; zero-input and zero-state responses; sinusoidal steady-state analysis; impedance; resonance; network functions; power concepts; transformers; Laplace transforms. *Prerequisite:* PHYS 152L; *corequisite:* MATH 245.

EE 222 Fundamentals of Audio Engineering (3, Fa)

Introduction to basic audio engineering principles and techniques, with emphasis on practical sound-system analysis and design. Sound measurements, microphones, amplifiers, loudspeakers, and system integration.

EE 241 Applied Linear Algebra for Engineering (3, FaSp) Introduction to the theory of matrices, vector spaces, least-squares approximation and MATLAB. Applications to communications, control and signal processing. *Prerequisite:* MATH 126.

EE 301L Linear Systems (4, FaSp) Representation and analysis of linear time-invariant systems primarily for the continuous time case. Convolution, Fourier series and transform, Laplace transform, controls and communications applications. *Prerequisite:* EE 202L.

EE 320 Digital Media Basics for Multimedia (3, FaSp)

Digital media basics for creating multimedia applications including analog and digital representation, media editing, interface construction, CD ROM and network delivery. *Corequisite:* ITP 210.

EE 322 Introduction to Digital Audio (3, Fa) Fundamentals of sound, acoustics and digital audio signal processing.

EE 326Lx Essentials of Electrical Engineering (4)

Network analysis and theorems; transient analysis; transformers; semiconductor physics and circuits; power amplifiers, modulation and demodulation, and pulse, digital, and switching circuits. Introduction to instrumentation. Not available for credit to electrical engineering majors. *Prerequisite:* PHYS 152L, MATH 126.

EE 328Lx Circuits and Electronics for Computer Engineers (3, Fa)

Introduction to the physical principles of governing analog circuits for data conversions and data communications. Elementary device behavior for digital systems. Not available for credit to electrical engineering majors. *Prerequisite:* PHYS 152L.

EE 330 Electromagnetics I (3, FaSp)

Basic static and dynamic electromagnetic field theory and applications; electrostatics, magnetostatics, Maxwell's equations, energy flow, plane waves incident on planar boundaries, transmission lines. *Prerequisite:* EE 202L, MATH 445, PHYS 152L.

EE 337L Engineering Nano-Systems (3, Sp)

Methods to control and exploit the phenomena of nano-science, and the integration of nano-technology into systems. Development of fundamental concepts through a series of experimental modules. (Duplicates credit in former EE 238L.) *Prerequisite:* PHYS 152L.

EE 338 Physical Electronics (3)

Semiconductor device characteristics and applications. Physical models of electronic conduction in solids, p-n junctions, bipolar and field effect transistors and other solid-state devices. *Prerequisite:* EE 202L, PHYS 152L.

EE 348L Electronic Circuits (4, FaSp) Basic analog and digital circuit design using Bipolar Junction Transistors, Field Effect Transistors and integrated circuits. *Corequisite:* EE 338.

EE 351 Programming and Multimedia on the World Wide Web (3, Sp) (Enroll in CSCI 351)

EE 352L Computer Organization and Architecture (3, Sp) Computer organization and architecture. Concepts include: computer evolution and performance, system busses, cache memory, internal and external memory, input/output, operating system support, computer arithmetic. *Prerequisite:* CSCI 102.

EE 355x Software Design for Electrical Engineers (3) Object-oriented programming techniques, basic data structures, and elementary complexity analysis for the modeling, simulation, and solution of engineering problems. Not available for credit for CSCI, CSGM, CSBA, or CECS majors. (Duplicates credit in former CSCI 355x). *Prerequisite:* EE 150.

EE 357 Basic Organization of Computer Systems (3, FaSp) Organization and operation of the processor, memory and I/O of a minicomputer at the machine language level; assembly language programming; data representation and computer arithmetic. *Prerequisite:* EE 101, EE 201L, and a high level programming language.

EE 364 Introduction to Probability and Statistics for Electrical Engineering and Computer Science (3, FaSp) Introduction to concepts of randomness and uncertainty: probability, random variables, statistics. Applications to digital communications, signal processing, automatic control, computer engineering and computer science. *Prerequisite:* MATH 225 or MATH 245.

EE 370 Electromechanics (3) Ferromagnetism and transformers. Energy conversion in singly and multiply excited systems. Concepts in rotating machinery analysis. Direct energy conversion. *Prerequisite:* EE 330.

EE 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

EE 401 Transform Theory for Engineers (3, Fa) Complex variables, Cauchy Riemann conditions, contour integration and residue theory; Fourier transform; Laplace transform; sampling theory. Discrete time filters, discrete and fast Fourier transform. *Prerequisite:* EE 301L and MATH 445.

EE 415 Introduction to MEMS (3) (Enroll in AME 455)

EE 422x Electromagnetic Systems Design (3, FaSp) Applied electromagnetics for large- and small-scale electromechanical systems. Comprehensive design project. Capstone design experience. Open only to seniors. Not available for graduate credit. *Prerequisite:* EE 330.

EE 423Lx Loudspeaker and Sound-System Design (3, Sp) Project-based design of loudspeaker transducers, filters, and enclosures. Measurement of transfer functions, acoustical performance, distortion, Thiele-Small parameters, and power handling. Listening evaluations. Capstone design experience. Open only to seniors. Not available for graduate credit. *Prerequisite:* EE 301L or AME 302; PHYS 152L; *recommended preparation:* EE 330.

EE 434Lx Digital Signal Processing Design Laboratory (4) Experiments and design project in digital signal processing (e.g., real-time DSP, acoustics, video) including: systems specification, preliminary analysis, trade-off studies, implementation, presentation. Capstone design experience. Open only to seniors. Not available for graduate credit. *Prerequisite:* EE 483; *recommended preparation:* EE 469.

EE 436 Introduction to Condensed Matter Physics (4, Irregular, Sp) (Enroll in PHYS 440)

EE 438L Processing for Microelectronics (3) Applications and electrical evaluation of selected processes used in electronic microfabrication. (Duplicates credit in former MASC 438L.) *Prerequisite:* EE 338.

EE 439 Principles of Semiconductor Processing (3) (Enroll in MASC 439)

EE 441 Applied Linear Algebra for Engineering (3, FaSpSm) Introduction to linear algebra and matrix theory and their underlying concepts. Applications to engineering problems. *Prerequisite:* MATH 445.

EE 443 Introduction to Power Systems (3) Components of power systems. Analysis techniques in electrical power generation transmission and utilization. Environmental and economic considerations in system operations and planning. *Recommended preparation:* EE 370.

EE 444 Power Systems Technology (3, Fa) Comprehensive assessment of the technical, environmental, and regulatory challenges that affect the future delivery and utilization of electric power. Case-study analysis. *Prerequisite:* EE 202L.

EE 445 Introduction to Robotics (4) (Enroll in CSCI 445)

EE 447Lx Mixed Signal Electronic Circuits (4) Application of solid-state electronic devices to the design of linear and mixed-signal systems. Laboratory experiments and projects involving the design of electronic hardware. Capstone design experience. Open only to seniors. Not available for graduate credit. *Prerequisite:* EE 348L.

EE 448L Communication Electronics (4, FaSp) Analysis, design, and experimental evaluation of transistor-level communication circuits and microsystems. Transmission lines, impedance matching, noise, distortion, tuned amplifiers, mixers, oscillators, phase-locked loops. *Prerequisite:* EE 348L.

EE 450 Introduction to Computer Networks (3, FaSpSm) Network architectures; layered protocols, network service interface; local networks; long-haul networks; internal protocols; link protocols; addressing; routing; flow control; higher level protocols. *Prerequisite:* junior standing.

EE 452L Game Hardware Architectures (3, Fa) Architectural principles underlying modern game console hardware design; introduction to the programming techniques, optimization strategies, and hardware insights to create powerful games. *Prerequisite:* EE 352L.

EE 454L Introduction to System Design Using Microprocessors (4, FaSp) Operation and timing of 8/16/32-bit microprocessors; asynchronous and synchronous SRAM interface; burst and pipelined bus cycles, parallel and serial I/O, interrupt controller, DMA controller, bus protocols. *Prerequisite:* EE 201L and EE 357; *recommended preparation:* EE 457.

EE 455x Introduction to Programming Systems Design (4) (Enroll in CSCI 455x)

EE 457 Computer Systems Organization (3, FaSpSm) Register Transfer level machine organization; performance; arithmetic; pipelined processors; exceptions, out-of-order and speculative execution, cache, virtual memory, multi-core multi-threaded processors, cache coherence. *Prerequisite:* EE 201 and EE 357.

EE 459Lx Embedded Systems Design Laboratory (3, Sp) Specification, design, implementation, testing and documentation of a digital system project using embedded processors, programmable logic; analog I/O interfaces and application specific hardware. Capstone design experience. Open only to seniors. Not available for graduate credit. *Prerequisite:* EE 454L.

EE 460 Introduction to Artificial Intelligence (3) (Enroll in CSCI 460)

EE 464 Probability Theory for Engineers (3, FaSpSm) Axiomatic foundations of probability, random variables, functions of several random variables, introduction to statistics, sequences of random variables. *Prerequisite:* EE 301L and MATH 445.

EE 465 Probabilistic Methods in Computer Systems Modeling (3, FaSp) Review of probability; random variables; stochastic processes; Markov chains; and simple queueing theory. Applications to program and algorithm analysis; computer systems performance and reliability modeling. *Prerequisite:* MATH 407 or EE 364.

EE 467 Introduction to Communication Systems (3) Analog and digital communication systems. (De)modulation and (de)multiplexing of AM/FM/PM, noise, digital data formats, error rates, and spectral analysis. Review of wireless, networking, and optical systems. *Prerequisite:* EE 301L.

EE 469 Introduction to Digital Media Engineering (3)

Fundamentals of digital media representation, for audio, images and video signals. Sampling; Fourier and z-transforms; FFT; filter design; image segmentation, image and video compression standards. *Prerequisite:* EE 301L; EE 364 or MATH 407.

EE 470 Electromagnetics II (3)

Dynamic field theory and elementary solutions to Maxwell's equations. Introduction to propagation and radiation of electromagnetic fields. *Prerequisite:* EE 330.

EE 471 Applied Quantum Mechanics for Engineers (3)

Introductory quantum mechanics and applications. Schrodinger equation, atomic and molecular processes, time-dependent perturbation theory. Applications to lasers, solid-state demos and gaseous devices. *Prerequisite:* EE 330 or graduate standing.

EE 472 Introduction to Lasers and Laser Systems (3, Fa)

Electric dipole transitions; traveling wave and resonant amplifiers; laser pumping and rate equations; threshold, frequency, and power output of lasers; holography; laser communication systems. *Corequisite:* EE 470.

EE 473L Lasers and Optics Laboratory (3, Sp)

Introductory design/research laboratory in lasers and optics, which typically includes fiber optics, photonics, electro-optics, optical sensors, optical communication, optical signal processing and computing. *Corequisite:* EE 470.

EE 474 Introduction to Photonics (3, Sp)

Photonic system requirements; waveguide modes and dispersion; optical fiber modes, loss and dispersion; principles of operation of lasers, optical amplifiers, detectors and modulators; noise. *Prerequisite:* EE 330, EE 338.

EE 475 Wireless Communication Technology (3, Fa)

Fundamentals of wireless communication from a device point of view. Lab experiments and design project. *Recommended preparation:* EE 241, EE 483.

EE 476 Chemical Engineering Materials (3, Sp)

(Enroll in CHE 476)

EE 477L MOS VLSI Circuit Design (4, FaSp)

Analysis and design of digital MOS VLSI circuits including area, delay and power minimization. Laboratory assignments including design, layout, extraction, simulation and automatic synthesis. *Prerequisite:* EE 328Lx or EE 338.

EE 478Lx Digital Electronic Circuit Design (4, Sp)

Design of digital electronic circuits. Laboratory experiments and an extensive term project using digital hardware. Capstone design experience. Open only to seniors. Not available for graduate credit. *Prerequisite:* EE 348L.

EE 479 Analog and Non-Linear Integrated Circuit Design (3, Fa)

Analysis and design techniques for CMOS analog and non-linear integrated circuits. Frequency and noise characteristics of broadband amplifiers. Feedback, oscillators, and phase-locked loops. *Prerequisite:* EE 348L.

EE 480 Introduction to Nanoscience and Nanotechnology (3, Fa)

Next-generation nanoscale materials and electronic devices: nanoscale fabrication and characterization, nanomaterials, nanoelectronics, and nanobiotechnology. *Prerequisite:* EE 338.

EE 481L Control Systems Laboratory (3, Sp)

(Enroll in AME 443L)

EE 482 Linear Control Systems (3, FaSpSm)

Analysis of linear control systems; continuous and sampled-data systems, various stability criteria; frequency response and root locus compensation techniques. *Prerequisite:* EE 301L or graduate standing.

EE 483 Introduction to Digital Signal Processing (3, FaSp)

Fundamentals of digital signal processing covering: discrete time linear systems, quantization, sampling, Z-transforms, Fourier transforms, FFTs and filter design. *Prerequisite:* EE 301L.

EE 484x Communication System Design (3, Sp)

Design and analysis of analog and digital communication systems. System models, requirements, development, performance analysis and component selection techniques. Comprehensive system design project. Capstone design experience. Open only to seniors. Not available for graduate credit. *Prerequisite:* EE 364, EE 475; *recommended preparation:* EE 467.

EE 485 Telecommunications Technology (3)

Technical development of the telecommunications industry and the accompanying regulatory environment. Case-study analysis. *Prerequisite:* EE 301L.

EE 490x Directed Research (1-8, max 12)

Individual research and readings. Not available for graduate credit.

EE 499 Special Topics (2-4, max 8)

Course content will be selected each semester from current developments in the field of electrical engineering.

EE 500 Neural and Fuzzy Systems (3, FaSpSm)

Neural networks and fuzzy systems, including: neuron structure and dynamics, unsupervised and supervised learning, network models and architectures, network stability and learning convergence. *Recommended preparation:* EE 464 or EE 503.

EE 501 Solid State (3)

(Enroll in MASC 501)

EE 502 Advanced Solid State (3)

(Enroll in MASC 502)

EE 503 Probability for Electrical and Computer Engineers (4, FaSp)

Rigorous coverage of probability, discrete and continuous random variables, functions of multiple random variables, covariance, correlation, random sequences, Markov chains, estimation, and introduction to statistics. (Duplicates credit in EE 464 and EE 465.)

EE 504L Solid-State Processing and Integrated Circuits Laboratory (3)

Laboratory oriented with lectures keyed to practical procedures and processes. Solid-state fabrication and analysis fundamentals; basic device construction techniques. *Prerequisite:* BSEE.

EE 506 Semiconductor Physics (3)

Semiconductor bonds, crystallography, band structure assumptions, group theory, band structure results, k.p. method, quantum wells, wires and dots, superlattices, amorphous, organic semiconductors, defects, statistics, surfaces. *Prerequisite:* MASC 501.

EE 509 Electromagnetics for Semiconductor Photonics (3)

Overview of electromagnetics needed to understand and design photonic devices. Includes discussion of waveguides and resonant cavities and an introduction to photonic crystals.

EE 510 Symmetrical Components (3)

The theory of symmetrical components and their use in power system analysis; sequence impedances of system components; other transformations and applications.

EE 512 Stochastic Processes (3)

Probability theory and stochastic processes, including renewal theory, Markov chains, Brownian motion, martingales, and stochastic calculus. Applications in communication networks, queueing theory, and financial systems. *Prerequisite:* EE 441 and EE 464, EE 465 or EE 503.

EE 513 Solid State Energy Devices (3)

Design and operation of solar photovoltaic energy converters, thermovoltaic energy converters, thermoelectric energy converters, and solid state light emitters; their roles in renewal and conservation of energy. *Recommended preparation:* EE 338.

EE 514 Quantum Error Correction (3)

A comprehensive introduction to quantum error correction and decoherence control, from the basics to the cutting edge, enabling students to delve into current research topics. *Recommended preparation:* EE 520.

EE 515 High Voltage Technology (3)

High voltage engineering basic concepts; theoretical, design, and practical aspects of overvoltages, travelling-waves, insulation, and aging; breakdown mechanisms; insulation coordination.

EE 517 Statistics for Engineers (3, FaSpSm)

Presents statistics with engineering emphasis. Topics include confidence intervals, hypothesis testing, estimation, regression, nonparametric tests, analysis of variance, quality control, and experimental design. *Recommended preparation:* EE 464 or EE 503.

EE 518 Mathematics and Tools for Financial Engineering (3)

Students will build a mathematical background for studying financial engineering. Emphasis is on analysis, proofs and examples. Mathwork's Financial toolbox will be introduced.

EE 519 Speech Recognition and Processing for Multimedia (3, Fa) Speech production, acoustics, perception, synthesis, compression, recognition, transmission. Coding for speech, music, and CD-quality. Feature extraction. Echo cancellation. Audio, visual synchronization. Multimedia, internet use. *Prerequisite:* EE 483.

EE 520 Introduction to Quantum Information Processing (3, FaSpSm) Introduces the basics of quantum computation and quantum information theory: quantum bits and registers, unitary gates, algorithms, error correction, and quantum cryptography. *Recommended preparation:* EE 441 and EE 464 or EE 503.

EE 521 Power Systems Analysis and Design (3) Power system planning, studies, and design; time-domain modeling and analysis of power-system networks; power flow, stability, fault, and economic dispatch analysis; symmetrical components. *Prerequisite:* EE 443.

EE 522 Immersive Audio Signal Processing (3, Sp) Fundamentals of digital audio signal processing, room acoustics, and psychoacoustics. Algorithms for real-time implementation of immersive audio systems for integrated media applications. *Prerequisite:* EE 301L; *recommended preparation:* EE 483.

EE 523 Advanced Biomedical Imaging (3) (Enroll in BME 525)

EE 524 Transients in Power Systems (3) Overvoltages during faults, voltage recovery, arcing faults, restriking, theory of switching surges. Systems grounding, traveling waves, lightning and surge protection, insulation coordination. *Prerequisite:* EE 443.

EE 525 Power System Protection (3) Theory of system and equipment protection, characteristics of relays, relay coordination, and system considerations. *Prerequisite:* EE 510.

EE 526 Renewable Energy in Power Systems (3) Renewable energy sources and their integration in electrical networks. Power-flow control from highly variable resources. Cost analysis and planning.

EE 527 Net-Centric Power-System Control (3) Control and stability of large-scale systems such as the electric power grid. Integration with information networks. *Corequisite:* EE 521; *recommended preparation:* EE 484 or equivalent.

EE 528 Power Electronics (3) Fundamentals of switched-mode power converters operating under steady-state and transient conditions. Feedback control systems. Magnetic circuit design.

EE 529 Optics (3) Basic graduate level optics including wave optics, foundations of geometric optics, optical elements, aberration theory, Hermite-Gaussian beams, multilayer structures, and matrix techniques. *Recommended preparation:* EE 470 or graduate standing.

EE 530 Optical Materials, Instruments and Devices (3) Anisotropic materials and devices; properties of metals; design and theory of selected optical instruments; properties of electrooptic, acoustooptic, and spatial light modulators; optical detectors. *Prerequisite:* EE 529.

EE 531 Nonlinear Optics (3) Theory of nonlinear optical susceptibility and application to self-focusing, harmonic generation, and parametric interactions. Raman and Brillouin scattering. Coherent spectroscopy. *Prerequisite:* EE 470.

EE 532 Wireless Internet and Pervasive Computing (3, Fa) Wireless Internet access technologies, 3G cellular systems, WAP and PKI protocols, mobile computing devices, network security for mobile E-commerce, software and middleware for pervasive, cluster, grid, and Internet computing. *Prerequisite:* EE 450; *recommended preparation:* EE 457.

EE 533 Network Processor Design and Programming (3, Sp) Understanding of network processor architecture, applications, and other relevant issues. Program network processor and test under realistic network environment. Design and deploy custom network processor. *Prerequisite:* EE 457; *recommended preparation:* EE 450.

EE 534 Materials Characterization (3) (Enroll in MASC 534)

EE 535 Mobile Communications (3, Fa) The mobile communication channel; techniques used to combat the channel; cellular communications; multiple-access techniques; example mobile communication systems. *Prerequisite:* EE 441, EE 567, EE 464 or EE 465; *recommended preparation:* EE 562a, EE 564.

EE 536ab Mixed-Signal Integrated Circuit Design (3-3, FaSp) *a:* MOSFET operation and models; voltage references and biasing; elementary amplifier configurations; design techniques for high-speed operational amplifiers, comparators and transconductors; compensation methods. *b:* Non-linear integrated circuits, data-converter architectures and implementations, comprehensive design project. *Prerequisite:* EE 479.

EE 537 Modern Solid-State Devices (3, Fa) Integrated-circuit technologies for mixed-signal communication and data systems. Constituent device models and their limitations. Contemporary research topics. *Prerequisite:* EE 338.

EE 539 Engineering Quantum Mechanics (3, Fa) Quantum mechanics for engineering majors who work with solid-state devices, quantum electronics, and photonics. Schroedinger equation, perturbation theory, electronic and optical processes.

EE 540 Introduction to Quantum Electronics (3) Fundamentals of light amplification; laser amplifiers and oscillators; atomic pumping; maser and laser systems; definitions of coherence; measurements in quantum electronics. *Prerequisite:* EE 470.

EE 541 Radio Frequency Filter Design (3, Fa) Theory and realization of passive and transconductance-based active filters for radio frequency communications. Distributed and quasi-distributed passive filters. Circuit testing via scattering parameters. *Prerequisite:* EE 348.

EE 543abL Digital Control Systems (a: 3, Fa; b: 1) *a:* Design, analysis, and implementation of digital control systems using microcomputers; Z-transform methods; frequency domain and state space approach; computational aspects; sampling and quantization. *Prerequisite:* EE 482. *b:* Modeling of real processes; design and implementation of digital control systems in the controls laboratory. (Lab is required for the *b* section only.) (Duplicates credit in former EE 485abL.) *Prerequisite:* EE 543a.

EE 544 Radio Frequency Systems and Hardware (3, Sp) Elements of radio frequency communication systems: modulation/demodulation strategies, transmission-channel impairments, performance criteria, hardware (low-noise amplifiers, mixers, oscillators), digital back-end, contemporary case studies. *Prerequisite:* EE 301L, EE 348L, EE 364.

EE 545 Robotics (3, FaSp) (Enroll in CSCI 545)

EE 546 Intelligent Embedded Systems (3, Sp) (Enroll in CSCI 546)

EE 547 Sensing and Planning in Robotics (3, Fa) (Enroll in CSCI 547)

EE 548 Analytical Methods in Robotics (3) (Enroll in AME 548)

EE 549 Queueing Theory for Performance Modeling (3, Sp) Review of Poisson and Markov processes; Markovian and non-Markovian queueing systems; networks of queues; priority queueing; applications of the theory to computer systems and communication networks. *Prerequisite:* EE 464 or EE 465 or EE 503.

EE 550 Design and Analysis of Computer Communication Networks (3, Fa) Applications of stochastic modeling and optimization techniques to communication network design and analysis. Data link control; performance models; multi-access channels; routing and flow control. *Prerequisite:* EE 450, EE 464 or EE 465 or EE 503; *recommended preparation:* EE 549.

EE 551 Principles of Radar (3, Irregular) Signal propagation, reflections from targets; radar equation; detection of scintillating targets; resolution; ambiguity functions; clutter rejection; tracking radars. *Prerequisite:* EE 562a; *recommended preparation:* EE 470.

EE 552 Asynchronous VLSI Design (3, FaSp) Asynchronous channels and architectures; implementation design styles; controller synthesis; hazards, and races; Petri-nets; performance analysis, and optimization; globally asynchronous locally synchronous design. Open only to graduate students. *Prerequisite:* EE 477.

EE 553 Computational Solution of Optimization Problems (3, Sp) Computer algorithms for system optimization. Search techniques, gradient methods, parameter optimization in control systems. Optimization with constraints; linear and nonlinear programming. Random search techniques. *Prerequisite:* EE 441.

EE 554 Real Time Computer Systems (3, Sp) Structure of real-time computer systems; analog signals and devices; scheduling, synchronization of multiprocessors; reliability, availability; serial/parallel computations; real-time operating systems and languages; design examples. *Prerequisite:* EE 457.

EE 555 Broadband Network Architectures (3, FaSpSm) Broadband network architectures and services, technologies for high-speed access and core networks, optical infrastructure for layered network architectures, high performance switch and router architectures. *Prerequisite:* EE 450 and EE 464 or EE 465 or EE 503.

EE 556 Stochastic Systems and Finance (3, FaSpSm) Introductory probability; Markov chains; Martingales and stopping times; Brownian motion; Ito's calculus and formula; Black-Scholes formula; arbitrage pricing and risk neutral measures; options. *Prerequisite:* EE 441 and EE 464 or EE 465 or EE 503; *recommended preparation:* EE 562a or EE 562b or ISE 538.

EE 557 Computer Systems Architecture (3, FaSp) Computer architecture from a design perspective: Pipelined processors, speculative execution, VLIW, vector processors, memory systems, interconnection networks, shared-memory and message-passing multiprocessors, chip multiprocessors. *Prerequisite:* EE 457.

EE 558 Optical Fiber Communication Systems (3, FaSp) State-of-the-art optical fiber communication systems. Emphasis on optoelectronic-device and communication-systems issues necessary to provide high-speed and/or networked optical communications. *Recommended preparation:* EE 338; basic knowledge of optics, semiconductor, and communications concepts.

EE 559 Mathematical Pattern Recognition (3, Sp) Distribution free classification, discriminant functions, training algorithms; statistical classification, parametric and nonparametric techniques, potential functions; non-supervised learning. *Prerequisite:* EE 464 or EE 503; *corequisite:* EE 441.

EE 560 Digital System Design-Tools and Techniques (3, Sm) ASIC design, FPGAs, VHDL, verilog, test benches, simulation, synthesis, timing analysis, post-synthesis simulation, FIFOs, handshaking, memory interface, PCI bus protocol, CAD tools, design lab exercises. *Prerequisite:* EE 457, EE 454L; *recommended preparation:* familiarity with CAD tools.

EE 561 Foundations of Artificial Intelligence (3-3, FaSp) (Enroll in CSCI 561)

EE 562ab Random Processes in Engineering (a: 3, FaSpSm; b: 3, Irregular) *a:* Random vectors, sequences, and functions. Linear transformations, second moment theory, spectral densities, narrowband processes, Gaussian processes, correlation detection, linear minimum mean square error estimation. *Prerequisite:* EE 441, EE 464 or EE 503. *b:* Orthogonal or independent increment processes. Poisson processes. Nonlinear operations on random processes; power-law detectors. Markov chains and processes; the Fokker-Planck equation; level crossing problems. *Prerequisite:* EE 562a.

EE 563 Estimation Theory (3, Fa) Parameter estimation and state estimation technique including: least squares, BLUE, maximum-likelihood, maximum a posteriori, Kalman-prediction, Kalman-filtering and Kalman smoothing and extended Kalman filtering. *Prerequisite:* EE 562a.

EE 564 Communication Theory (3) Elementary statistical design theory with applications to the design of digital communications receivers and radar receivers; signal design in digital communications. *Prerequisite:* EE 441, EE 464 or EE 503; *corequisite:* EE 562a; *recommended preparation:* EE 401.

EE 565ab Information Theory (a: 3, Fa; b: 3, Irregular) Information measures; asymptotic equipartition property; source coding theorem; noiseless coding; cryptography, channel coding theorem; rate distortion theory; Gaussian channels; multiple user source and channel theory. *Prerequisite:* EE 464 or EE 465 or EE 503.

EE 566 Optical Information Processing (3, Fa) Coherent and incoherent optical transforming, imaging and two-dimensional information processing systems; optical image processing, spatial frequency response and filtering; optical and digital holography. *Recommended preparation:* EE 401.

EE 567 Communication Systems (3, Fa) Analysis of communication systems operating from very low to optical frequencies. Comparison of modulation and detection methods. System components description. Optimum design of communication systems. *Corequisite:* EE 464 or EE 465 or EE 503; *recommended preparation:* EE 441.

EE 568 Error Correcting Codes (3, Sp) Finite field theory; linear block codes, convolutional codes, algebraic codes; decoding methods; examples. *Prerequisite:* EE 441 and EE 464 or EE 503.

EE 569 Introduction to Digital Image Processing (3, FaSpSm) Image sampling, 2-D image transform, image enhancement, geometric image modification, morphological processing, edge detection, texture analysis, image filtering and restoration. Graduate standing. *Recommended preparation:* EE 401, EE 464 or EE 503.

EE 570ab Advanced Electromagnetic Theory (3-3) Static and dynamic electromagnetic field theory; solution of scalar and vector boundary value problems; Kirchhoff radiation theory; geometrical optics and geometrical diffraction theory. *Prerequisite:* EE 470.

EE 571ab Microwave Networks (3-3) *a:* Microwave network theory for transmission lines and waveguides, discontinuities, impedance transformers, resonators, multi-junction networks, periodic structures, non-reciprocal and active devices. *Prerequisite:* EE 470. *b:* Parameter matrices, approximate design procedures for distributed networks from lumped networks, coupled lines, equivalent coupled-line circuits, Kuroda's identities, and capacitance matrix transformations. *Prerequisite:* EE 571a.

EE 572ab Plasma Dynamics (3-3) Particle drifts, collision phenomena, Boltzmann and Vlasov equations, hydrodynamic equations, Coulomb interactions; waves in a cold and hot plasma, plasma oscillations, Landau damping, hydromagnetic waves.

EE 573ab Antenna Analysis (3-3) Analysis of idealized antenna models, including the dyadic Green's function, reciprocity, aperture radiation, methods of moments, geometrical and physical optics, reflectors, arrays. *Prerequisite:* EE 470.

EE 574 Computer Vision (3, Fa) (Enroll in CSCI 574)

EE 577ab VLSI System Design (a: 3, FaSp; b: 3, FaSp) *a:* Integrated circuit fabrication; circuit simulation; basic device physics; simple device layout; structured chip design; timing; project chip; MOS logic; system design silicon compilers. *Prerequisite:* EE 477; *b:* VLSI design project; chip level design issues: power and clock distribution, packaging, I/O; design techniques; testability; chip fabrication and test.

EE 578 Reflector Antennas (3) Introduction to the analytical and numerical techniques used in the analysis and design of modern reflector antenna systems, including physical optics, asymptotic techniques, shaping and feeds. *Prerequisite:* EE 470.

EE 579 Wireless and Mobile Networks Design and Laboratory (3, Sp) Mobile ad hoc networks: ad hoc and geographic routing, resource discovery, medium access control, IP-mobility, mobility modeling, wired-wireless networks. Lab: wireless LAN measurement, mobile-IP, ad hoc routing. *Prerequisite:* CSCI 551 or EE 550 or EE 555; *recommended preparation:* programming, network simulation.

EE 580 Optical Communications (3, Sp) Analysis and design of optical and fiber optical systems; direct detection, heterodyning, laser modulation formats; receiver analysis and fiber modeling; digital error probabilities. *Prerequisite:* EE 562a.

EE 581 Mathematical Foundations for Computer-Aided Design of VLSI Circuits (3, Sp) Mathematical techniques employed in computer-aided-design systems, including: graph theory, algorithmic and heuristic techniques for combinatorial problems, data structures and modeling. *Corequisites:* EE 457, EE 477.

EE 583 Adaptive Signal Processing (3, Sp) Wiener filtering, linear prediction, method of steepest descent, stochastic gradient algorithms, recursive least-squares (RLS), fast RLS, RLS with systolic arrays, QRD-least squares methods, blind deconvolution. *Prerequisite:* EE 483, EE 562a.

EE 584 Chaotic Systems (3, Fa) Logistic map, chaotic bifurcation, strange attractors, and fractals. Conservative dynamical systems and measure preserving transformations. Ergodicity. Kolmogorov-Sinai entropy. Chaotic/stochastic realization. Chaos in feedback. *Prerequisite:* EE 562a.

EE 585 Linear System Theory (3, FaSpSm) Analysis of linear dynamical systems by state-space techniques; controllability, observability, stability, passivity. Application of feedback control and network synthesis. *Prerequisite:* EE 441.

EE 586L Advanced DSP Design Laboratory (4) Real-time adaptive signal processing design projects using special purpose DSP processors. Suitable project areas include acoustics, speech, arrays, image compression and biomedical signal processing. *Prerequisite:* EE 583 or EE 569.

EE 587 Nonlinear and Adaptive Control (3, Fa) Nonlinear systems, Lyapunov Stability, Parameter Identification, direct and indirect adaptive control for linear and nonlinear systems. Design analysis, stability, robustness and applications. Backstepping, feedback linearization. *Prerequisite:* EE 482, EE 585.

EE 588 Linear Quadratic Control (3, Sp) Linear systems with quadratic cost, Riccati equations, observers, Kalman-Bucy filters, separation principle, discrete linear optimal control systems. *Prerequisite:* EE 585; *recommended preparation:* EE 482, EE 562a.

EE 589 Statistical Optics (3) Statistical methods in optical information processing. Interferometry, propagation, imaging with partially coherent light; statistics of randomly inhomogeneous media, photon counting, holography, photographic and optical detectors. *Prerequisite:* EE 566; *corequisite:* EE 562a.

EE 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

EE 591 Magnetic Resonance Imaging and Reconstruction (3, FaSpSm) Principles of magnetic resonance imaging. Spin physics, Fourier-based acquisition and reconstruction, generation of tissue contrast, fast imaging, artifact correction, advanced image reconstruction. *Prerequisite:* EE 483; *recommended preparation:* EE 441, BME 525 and EE 464 or EE 503, and familiarity with MATLAB.

EE 592 Computational Methods for Biomedical Imaging (3, Sp) Analytic tomographic reconstruction from projections in 2-D and 3-D; algorithms for model based reconstruction; maximum likelihood and Bayesian methods; applications to CT, PET and MRI. *Prerequisite:* EE 483, EE 562a.

EE 593 Multivariable Control (3, Fa) Feedback performance analysis; robustness and stability margins; sensitivity; disturbance attenuation; design tradeoffs; singular value, characteristic locus, and inverse Nyquist array design methods. *Prerequisite:* EE 482 and EE 585.

EE 594abz Master's Thesis (2-2-0, FaSpSm) For the master's degree. Credit on acceptance of thesis. Graded IP/CR/NC.

EE 595 Algebraic Coding Theory (3, FaSpSm) Finite field theory; Reed Solomon codes; algebraic codes; algebraic decoding methods; examples. *Prerequisite:* EE 441, EE 464 or EE 503.

EE 596 Wavelets (3, Fa) The theory and application of wavelet decomposition of signals. Includes subband coding, image compression, multiresolution signal processing, filter banks, and time-frequency tilings. *Prerequisite:* EE 441, EE 483; *recommended preparation:* EE 569, MATH 570a.

EE 597 Wireless Networks (3, Fa) Introduction to wireless networking technologies; fundamental architectural and design principles used at all protocol layers; optimization and performance evaluation using mathematical analysis and simulations. *Prerequisite:* EE 450, EE 464 or EE 465 or EE 503; *recommended preparation:* EE 467, familiarity with MATLAB and C programming.

EE 598 Electrical Engineering Research Seminar (1, max 2) Introduction to research in electrical engineering. Topics vary by semester. May be repeated for up to one unit of credit for M.S. students, two units of credit for Ph.D. students. Open only to master's and doctoral students. Graded CR/NC.

EE 599 Special Topics (2-4, max 9) The course content will be selected each semester to reflect current trends and developments in the field of electrical engineering.

EE 601 Advanced Semiconductor Device Physics (3) Fundamentals and limitations of nanoscale electronic and photonic semiconductor components. Engineering classical, mesoscale, and quantum electron and photon dynamics in advanced devices. *Recommended preparation:* EE 471 or EE 539.

EE 606 Nonequilibrium Processes in Semiconductors (3) Non-equilibrium processes in modern semiconductor devices. Carriers lifetime and trapping; luminescence; hot carrier and high field effects.

EE 607 Microelectromechanical Systems (3, FaSp) Exploration of the technology methods and physical principles of MEMS, and survey various MEMS of current interest. *Prerequisite:* EE 504.

EE 608L Microelectromechanical Systems Laboratory (3, Fa) Lab fabrication and analysis of several MEMS applications, including diaphragm-based sensors and actuators, microfluidic components, and deformable mirror array.

EE 612 Science and Practice of Nanotechnology (3, Fa) In-depth discussions of important topics in nanotechnology, including both the implementation and the underlying theory. *Prerequisite:* EE 330 or EE 470.

EE 619 Advanced Topics in Automatic Speech Recognition (3, FaSpSm) Advanced topics in automatic speech recognition, speaker recognition, spoken dialogue, conversational multimedia interfaces. *Recommended preparation:* EE 519 and CSCI 544 and EE 464 or EE 503.

EE 632 Integrated Communication Systems (3) Analysis and design of high-speed integrated communication systems at circuit and system levels. Emphasis on broadband wireless applications. Transceiver architectures, amplifiers, oscillators, frequency synthesizers. *Prerequisite:* EE 536a.

EE 635 Advanced Wireless Communications (3) Fundamentals of advanced wireless systems, including multi-antenna, cognitive, and cooperative systems as well as exploration of current standards in wireless networks in use today. *Prerequisite:* EE 535; *recommended preparation:* basic programming course.

EE 642 Advanced Geometrical Optics (3) First order design of optical systems; origin of aberrations and their effects on wave propagation and imaging based on geometrical and physical optics. *Prerequisite:* EE 529.

EE 645 Uncertainty Modeling and Stochastic Optimization (3) (Enroll in CE 645)

EE 648 Network Economics and Games (3) Economics of networks; game theory, mechanism design and auctions in networks; spectrum sharing mechanisms in communications; pricing of differentiated services; network security. *Prerequisite:* EE 450 and EE 464 or EE 465 or EE 503.

EE 649 Stochastic Network Optimization (3, FaSpSm) Optimization of wireless and ad-hoc mobile networks; opportunistic scheduling, flow control; back-pressure routing; queue stability; energy-delay and utility-delay tradeoffs. *Prerequisite:* EE 464 or EE 465 or EE 503.

EE 650 Advanced Topics in Computer Networks (3, Irregular) Protocol modeling: flow and congestion control, dynamic routing, distributed implementation; broadcast communication media and multiple access protocols; local networks, satellite networks, terrestrial radio networks. *Prerequisite:* EE 450 and EE 465 or EE 503; *recommended preparation:* EE 550 or CSCI 551.

EE 652 Low-Power Wireless Networks (3, Fa) Implementation of low-power wireless protocols for medium access, scheduling, multi-hop routing, congestion control, localization, synchronization. IP stack for the Internet of Things. Wireless sensor network applications. *Prerequisite:* EE 450; *recommended preparation:* CSCI 402, strong programming skills, and experience with Linux.

EE 653 Advanced Topics in Microarchitecture (3) Current research topics related to microprocessor architecture. Dynamically/statically scheduled processors, multithreading, chip multiprocessors, systems on a chip. Power, performance, complexity, dependability issues. Impact of technology. *Prerequisite:* EE 557.

EE 657 Parallel and Distributed Computing (3, FaSpSm) Scalable multiprocessor systems and clusters, virtual machine, service oriented architecture, network-based computing, peer-to-peer, grid and cloud based storage and computing, case studies. *Prerequisite:* EE 457; *recommended preparation:* EE 450.

EE 658 Diagnosis and Design of Reliable Digital Systems (3, Fa) Fault models; test generation; fault simulation; self-checking and self-testing circuits; design for testability; fault tolerant design techniques; case studies. *Prerequisite:* graduate standing.

EE 659 Interconnection Networks (3, Sp) Theory, design and analysis of interconnection networks for multiprocessor systems. Study of direct and indirect topologies, deadlock-free routing, flow control, network interfaces, optical interconnects. *Prerequisite:* EE 557.

EE 664 Advanced Topics in Communication Theory (3, Irregular) Synchronization in digital communication systems, tracking loop theory, acquisition and tracking, carrier and suppressed carrier waveforms, other advanced topics in communication theory. *Prerequisite:* EE 564.

EE 666 Data Communication (3, Irregular) Receiver design for modulations and channels with memory. Iterative and adaptive detection and decoding algorithms. Application to fading, intersymbol interference, and interference limited channels. *Prerequisite:* EE 564; *recommended preparation:* EE 568, EE 563 or EE 583.

EE 667 Array Signal Processing (3, Sp) Beamforming principles, monopulse and conical-scan concepts, phased arrays, synthetic multiple beam arrays; signal processing techniques for synthetic aperture formation, adaptivity, and retro-directing. *Prerequisite:* EE 562a.

EE 669 Multimedia Data Compression (3, FaSpSm) Lossless compression, audio/speech coding, vector quantization, fractal compression, JPEG and JPEG-2000, video compression techniques and MPEG standards, video transmission over wired and wireless networks. *Recommended preparation:* EE 464 or EE 503.

EE 674ab Advanced Topics in Computer Vision (3-3, Irregular) (Enroll in CSCI 674ab)

EE 675 Topics in Engineering Approaches to Music Cognition (3, max 6) (Enroll in ISE 575)

EE 677 VLSI Architectures and Algorithms (3) VLSI models; measures of area, volume and time; mapping algorithms; systolic arrays; area time tradeoffs; applications to signal and image processing problems. *Prerequisite:* EE 557.

EE 680 Computer-Aided Design of Digital Systems I (3, Sp) Synthesis; partitioning; placement; routing of digital circuits; integrated circuit design methods; simulation at the switch, gate, register transfer and system levels. *Prerequisite:* EE 581; *recommended preparation:* EE 577a.

EE 681 Computer-Aided Design of Digital Systems II (3) Theory and techniques for design and analysis of digital logic; specification, formal models; hardware-descriptive languages; formal verification, high level synthesis; logic synthesis. *Prerequisite:* EE 557, EE 680.

EE 682 Law and Intellectual Property for Engineers (3, Sp) Detailed introduction to the modern American legal system with a special focus on intellectual property doctrines. *Recommended preparation:* EE 464 or EE 503.

EE 690 Directed Research (1-4, maximum number to be determined by the department, FaSpSm) Laboratory study of specific problems by candidates for the degree Engineer in Electrical Engineering. Graded CR/NC.

EE 691 Advanced Magnetic Resonance Imaging (3, Fa) Advanced clinical and research applications, sparse sampling, RF pulse design, analysis of free precession sequences, NMR relaxation, in-vivo spectroscopy and other advanced topics. *Prerequisite:* EE 441, EE 562a, EE 591.

EE 790 Research (1-12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

EE 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC

Green Technologies

Office of Graduate and Professional Programs
Olin Hall of Engineering 106
(213) 740-4488
FAX: (213) 821-0851
Email: masters@gapp.usc.edu
Program Director: Edward W. Maby, Ph.D.

Master of Science in Green Technologies

Green Technologies is a highly interdisciplinary degree program that emphasizes green systems and the environment, energy technology and efficiency, and sustainability and society. The discipline seeks opportunities for alternative sourcing, conservation, efficiency and repurposing through an understanding of product life cycles from origins to recycling or inevitable disposal. Green technologists will design products, processes and complex infrastructure systems to promote sustainable attributes of importance to the environment and the global community.

The Green Technologies program requires a minimum of 27 units (typically nine courses). At least 18 units must be at the 500-level or above, and at least 18 units must be completed in the Viterbi School of Engineering. These 18 units may reflect courses offered by other schools if cross-listed in a department in the Viterbi School. Students with B.S. degrees in engineering and science disciplines can be accepted into the program.

REQUIRED COURSES		UNITS
Students are required to take two courses in each of three topical areas:		
<i>Green Systems and the Environment</i> (two courses)		
CE 515	Sustainable Infrastructure Systems	3
ISE 576	Industrial Ecology: Technology-Environment Interaction	3
<i>Energy Technology and Efficiency</i> (two courses)		
CHE 510	Energy and Process Efficiency	3

Also take only one of the following:

AME 577	Survey of Energy and Power for a Sustainable Future	3
EE 513	Solid State Energy Devices	3
EE 526	Renewable Energy in Power Systems	3
ENE 505	Energy and the Environment	3

Sustainability and Society (two courses)

CE 469	Sustainable Design and Construction	3
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Also take one of the following:*

ARCH 519	Sustainability in the Environment: Infrastructures, Urban Landscapes, and Buildings	3
CE 567	Smart Infrastructures	3
ENE 502	Environmental and Regulatory Compliance	3
GEOG 581	Concepts for Spatial Thinking	4

MOR 566	Sustainability and Competitive Advantage	3	PPD 692	Transportation and the Environment	4	Electives shall be chosen in consultation with an adviser to develop technical specialization in an area of interest to the student. This may include up to 3 units of directed research. <i>*Additional courses from this list may be used to fulfill the elective requirement.</i>
POSC 546	Seminar in Environmental Policy	4	PPDE 632	Sustainable Cities	4	
			Electives (three courses)		9	

Daniel J. Epstein Department of Industrial and Systems Engineering

Ethel Percy Andrus
Gerontology Center 240
(213) 740-4893
FAX: (213) 740-1120
Email: isedept@usc.edu
usc.edu/dept/ise
Chair: Julia L. Higle, Ph.D.

Faculty

Daniel J. Epstein Chair in Industrial and Systems Engineering: Sheldon M. Ross, Ph.D.

IBM Chair in Engineering Management: F. Stan Settles, Ph.D. (Astronautical Engineering)

Gordon S. Marshall Early Career Chair in Engineering: Qiang Huang, Ph.D.

David Packard Chair in Manufacturing Engineering: Stephen C-Y Lu, Ph.D. (Aerospace and Mechanical Engineering, Computer Science)

Professors: Maged Dessouky, Ph.D.; Randolph Hall, Ph.D.; Carl F. Kesselman, Ph.D. (Computer Science); Behrokh Khoshnevis, Ph.D. (Civil and Environmental Engineering; Aerospace and Mechanical Engineering); Najmedin Meshkati, Ph.D. (Civil and Environmental Engineering)*; James E. Moore II, Ph.D. (Civil and Environmental Engineering; Public Policy); Suvrajeet Sen (Electrical Engineering; Computer Science); Detlof von Winterfeldt (Public Policy)*

Associate Professors: Yong Chen, Ph.D.; Qiang Huang, Ph.D.; Mansour Rahimi, Ph.D.

Assistant Professors: Alejandro Toriello, Ph.D.; Shinyi Wu, Ph.D.

Adjunct Professors: Paul J. Kern; Michael Mann, Ph.D.

Adjunct Associate Professors: Tasos Soukias, Ph.D.; Marilee Wheaton

Research Professors: Yigal Arens, Ph.D.; Wanda M. Austin, Ph.D.; Malcolm Currie, Ph.D.; Mohamed I. Dessouky, Ph.D.; Stephen C. Hora, Ph.D. (Public Policy)

Research Associate Professor: Fernando Ordoñez, Ph.D. (Computer Science)

Research Assistant Professors: Jo Ann Lane, Ph.D.; Greg Placencia, Ph.D.

Professor of the Practice of Industrial and Systems Engineering: George Friedman, Ph.D.; Azad Madni, Ph.D.

*Associate Professor of the Practice of Industrial and Systems Engineering: Geza Bottlik, Engineer, P.E.; Kurt Palmer, Ph.D.**

Senior Lecturers: Nitin Kale, M.S. (Information Technology Program); Dana Sherman, Esq. (Civil and Environmental Engineering); Richard Vawter, M.S. (Information Technology Program)

Emeritus Professors: Gerald A. Fleischer, Ph.D., P.E.; Homer H. Grant, M.S.; Ralph Keeney, Ph.D. (Information and Operations Management); Gerald Nadler, Ph.D., P.E.; Peter Will, Ph.D. (Astronautical Engineering, Chemical Engineering)

**Recipient of university-wide or school teaching award.*

Honor Societies

Alpha Pi Mu

Alpha Pi Mu is the industrial engineering honor society. Qualifications for election are: juniors in the upper one-fifth of their class; seniors in the upper one-third of their class; master's degree students who have completed at least one-third of the courses required for their degree and rank among the top 10 students in all ISE master's degree programs; and doctoral students recommended by the department chair. The adviser is Kurt Palmer, Associate Professor of the Practice of Industrial and Systems Engineering, (213) 740-5960.

Omega Rho

Omega Rho is the operations research honor society to recognize academic excellence in operations research and encourage study of operations research, management science and closely associated disciplines. Election is by nomination only during the spring semester. The adviser is Alejandro Toriello, Professor, (213) 740-4891.

Undergraduate Degree Requirements

Undergraduate Education Program Mission

The mission of the Daniel J. Epstein Department of Industrial and Systems Engineering undergraduate programs is to:

- Provide students: the skills and knowledge to obtain employment and achieve leadership with the industrial and systems engineering profession or to proceed with graduate education; the intellectual resources to continue life-long learning; and the knowledge of professional ethics and critical reasoning skills necessary for contributing to society.
- Provide employers of industrial and systems engineering professionals with candidates who are technically competent, business aware, collaborative,

able to communicate effectively, and ethically grounded.

- Maintain and enhance the reputation of the Epstein department within the engineering, business and academic communities.

Undergraduate Education Program Objectives

Graduates of the Bachelor of Science in Industrial and Systems Engineering programs are prepared to achieve any of the following accomplishments:

- Obtain employment in an organization that values people who demonstrate both technical competence and business awareness.
- Pursue graduate or professional education.
- Assume a leadership role in their employment organization or community.
- Utilize critical reasoning, collaboration and creativity to contribute to society.

Undergraduate Education Program Outcomes

Industrial and systems engineering provides an education that blends information technology, engineering and management, with a strong emphasis on people skills, problem-solving skills and communication skills. Our program prepares students for successful careers by teaching students to:

- Describe the essential components and inter-connective relationships within complex systems.
- Design and execute experiments and create mathematical, numerical, heuristic and other objective models.
- Synthesize inventive and innovative solutions for creation and improvement of products, processes and systems.
- Generate and validate solutions to a problem.
- Work with others in a collaborative environment and contribute to the success of an organization.
- Clearly articulate and communicate findings.
- Understand contemporary developments in the field.
- Describe the principles for managing and operating production systems within their area of emphasis.

For additional information, visit usc.edu/dept/ise.

The Department of Industrial and Systems Engineering offers a Bachelor of Science degree in Industrial and Systems Engineering. Additionally, information systems engineering exists as an emphasis within this industrial and systems engineering program major. An area of emphasis appears in parentheses after the primary major name on the transcript.

Bachelor of Science in Industrial and Systems Engineering

The requirement for the degree is 128 units. A cumulative grade point average of C (2.0) is required for all upper division courses applied towards the major,

regardless of the department in which the courses are taken. See the common requirements for undergraduate degrees, page 569xx.

COMPOSITION/WRITING REQUIREMENT		UNITS
WRIT 140*	Writing and Critical Reasoning	4
WRIT 340	Advanced Writing	3

GENERAL EDUCATION (SEE PAGE 63XX)		UNITS
General education* +		20

PRE-MAJOR REQUIREMENTS		UNITS
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Math Requirement

MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 225	Linear Algebra and Linear Differential Equations	4
MATH 226	Calculus III	4

Physics Requirement

PHYS 151L**	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4

Chemistry Elective

CHEM 105aL	General Chemistry, or	
CHEM 115aL	Advanced General Chemistry, or	
MASC 110L	Materials Science	4

Economics Requirement

ECON 203	Principles of Microeconomics	4
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MAJOR REQUIREMENTS		UNITS
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Business

ACCT 410X	Accounting for Non-Business Majors	4
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Engineering

ENGR 102	Engineering Freshman Academy	2
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Electrical Engineering

AME 341a	Mechnoptonics Laboratory I, or	3
EE 326L***	Essentials of Electrical Engineering	4

Computer Science

CSCI 101L	Fundamentals of Computer Programming	3
ISE 382	Database Systems: Concepts, Design and Implementation	3

Industrial and Systems Engineering

ISE 105	Introduction to Industrial and Systems Engineering	2
ISE 220	Probability Concepts in Engineering	3
ISE 225	Engineering Statistics I	3
ISE 232L	Manufacturing Processes	3
ISE 310L	Production I: Facilities and Logistics	4

ISE 330	Introduction to Operations Research I	3
ISE 331	Introduction to Operations Research II	3
ISE 370L	Human Factors in Work Design	4
ISE 410	Production II: Planning and Scheduling	3
ISE 426	Statistical Quality Control	3
ISE 435	Discrete Systems Simulation	3
ISE 440	Work, Technology, and Organization	3
ISE 460	Engineering Economy	3
ISE 495abx	Senior Design Project	2-2

MAJOR ELECTIVES		UNITS
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Approved engineering electives***		3
Free electives		7
Total units:		128

*GE Category VI is taken concurrently with WRIT 140.

**GE Category III is fulfilled by PHYS/CHEM requirement.

***Students selecting EE 326 are only required to complete 2 units of approved engineering elective.

*The university allows engineering majors to replace the GE Category IV with a second course in Categories I, II or VI.

Bachelor of Science in Industrial and Systems Engineering

Emphasis in Information Systems Engineering

The requirement for the degree with an emphasis in information systems engineering is 128 units. A cumulative grade point average of C (2.0) is required for all upper division courses applied towards the major, regardless of the department in which the courses are taken. Students must choose either the computer science track or the information and operations management track. See the common requirements for undergraduate degrees, page 569xx.

During the freshman year, students in either track enroll in a common set of required courses. By the sophomore year, students enroll in required and elective courses for one track or the other.

COMPOSITION/WRITING REQUIREMENT		UNITS
WRIT 140	Writing and Critical Reasoning	4
WRIT 340	Advanced Writing	3

GENERAL EDUCATION (SEE PAGE 63XX)		UNITS
General education* +		20

PRE-MAJOR REQUIREMENTS		UNITS
------------------------	--	-------

Math Requirement

MATH 125	Calculus I	4
MATH 126	Calculus II	4
MATH 226	Calculus III	4
MATH 225	Linear Algebra and Linear Differential Equations	4

Physics Requirement

PHYS 151	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 152	Fundamentals of Physics II: Electricity and Magnetism	4

Chemistry Elective

CHEM 105aL	General Chemistry, or	
CHEM 115aL	Advanced General Chemistry, or	
MASC 110L	Materials Science	4

Engineering

ENGR 102	Engineering Freshman Academy	2
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COMPUTER SCIENCE TRACK		UNITS
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Computer Science

CSCI 101L	Fundamentals of Computer Programming	3
CSCI 102L	Data Structures	3
CSCI 200L	Object-Oriented Programming	3
CSCI 201L	Principles of Software Development	3

Industrial and Systems Engineering

ISE 105	Introduction to Industrial and Systems Engineering	2
ISE 220	Probability Concepts in Engineering	3
ISE 225	Engineering Statistics I	3
ISE 310L	Production I: Facilities and Logistics	4
ISE 330	Introduction to Operations Research: Deterministic Models	3
ISE 382	Database Systems: Concepts, Design and Implementation	3
ISE 410	Production II: Planning and Scheduling	3
ISE 435	Discrete Systems Simulation	3
ISE 440	Work, Technology, and Organization	3
ISE 460	Engineering Economy	3
ISE 470	Human/Computer Interface Design	3
ISE 495abx	Senior Design Project	2-2

Electives**

Computer science elective	3
Information technology program/information and operations management electives	6
Approved engineering elective	3
Free electives	9

INFORMATION AND

OPERATIONS MANAGEMENT TRACK		UNITS
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Business

IOM 431	Managing the Digital Revolution for Your Business	4
IOM 433	Business Information Systems Analysis and Design	4
IOM 435	Business Database Systems	4

Computer Science

CSCI 101L	Fundamentals of Computer Programming	3
ITP 482	Engineering Database Applications	3

Industrial and Systems Engineering

ISE 105	Introduction to Industrial and Systems Engineering	2
ISE 220	Probability Concepts in Engineering	3
ISE 225	Engineering Statistics I	3
ISE 310L	Production I: Facilities and Logistics	4
ISE 330	Introduction to Operations Research: Deterministic Models	3
ISE 410	Production II: Planning and Scheduling	3
ISE 435	Discrete Systems Simulation	3
ISE 440	Work, Technology, and Organization	3
ISE 460	Engineering Economy	3
ISE 470	Human/Computer Interface Design	3
ISE 495abx	Senior Design Project	2-2

Electives**

Information technology program/information and operations management electives	6
Approved engineering elective	3
Free electives	10
Total units:	128

*GE Category III is fulfilled by PHYS/CHEM requirement.

**Electives in the CSCI/ITP/IOM or approved engineering electives lists are geared so that students can take courses in an area of interest. Courses not listed may be petitioned for approval through the department.

*The university allows engineering majors to replace the GE Category IV with a second course in Categories I, II or VI.

Computer Science Electives: CSCI 351, CSCI 377, CSCI 485, EE 450

ITP/IOM Electives: ITP 215Lx, ITP 320Lx, ITP 321x, ITP 325x, ITP 454x, ITP 457x, ITP 486, ITP 487, IOM 428

Approved Engineering Electives: Any of the courses listed below that are not specifically required in a student's program may be selected to satisfy the approved engineering elective requirement. Substitutions of a graduate level ISE course will be considered upon petition.

AME 341a, AME 341B, CE 408, CE 460, CE 471, ISE 331, ISE 426, ISE 470, ITP 482L.

Minor in Engineering Management

This minor is designed to provide students who have a sound foundation in mathematics and the sciences with tools and skills for managerial analysis and problem solving.

Science and technology are driving significant portions of American and global economies. Individuals, companies and governments are demanding products, services and systems, which grow more complicated every day. Suppliers are forced by competition to provide goods and services efficiently and economically.

Scientists and engineers are trained in scientific and technical subjects which form an excellent base for building complex, technical products, services and systems. But more and more, scientists and engineers are

managing the financial, material and human resources required to turn abstract ideas into physical and virtual reality, often without any formal management training. This minor provides that training, a complement to any science or technology degree.

Application Procedures

Applicants must be upper division students in good standing and complete the Change/Addition of Major, Minor or Degree Objective form. The minor is not open to industrial and systems engineering majors.

PREREQUISITES	UNITS
ISE 220	Probability Concepts in Engineering (or equivalent) 3
ISE 225	Engineering Statistics I (or equivalent) 3
MATH 125	Calculus I 4
MATH 126	Calculus II 4
MATH 225	Linear Algebra and Linear Differential Equations (or equivalent) 4
MATH 226	Calculus III 4

REQUIRED COURSES	UNITS
BUAD 301	Technical Entrepreneurship 3
ISE 330	Introduction to Operations Research: Deterministic Models 3
ISE 370L	Human Factors in Work Design 4
ISE 440	Work, Technology, and Organization 3
ISE 460	Engineering Economy 3

Minor in Engineering Technology Commercialization

See listing in the Special Educational Opportunities section, page 586xx.

Graduate Degree Requirements**Master of Digital Supply Chain Management**

This interdisciplinary program is offered jointly with the Department of Information and Operations Management in the USC Marshall School of Business. The program is available via distance education. See page 163xx for program requirements.

**Engineering Management Program
Ethel Percy Andrus
Gerontology Center 240
(213) 740-4893**

Program Director: Geza Bottlik, *Engineer, P.E.*

This program is designed primarily, but not exclusively, for graduate engineers whose career objectives lead to increasing technical management responsibilities. Students interested in the engineering management objectives may also want to consider the M.S., Industrial and Systems Engineering/MBA dual degree program.

Master of Science in Engineering Management

A total of 30 units is required for the degree. A minimum of 18 units must be taken in the Epstein Department of Industrial and Systems Engineering. A total of 21 units must be at the 500 level or above. The program is available via distance education.

Applicants to the program are expected to have a degree in engineering or the equivalent.

REQUIRED COURSES (6 UNITS)	UNITS
ISE 500	Engineering Management Decisions and Statistics 3
ISE 561	Economic Analysis of Engineering Projects 3

AT LEAST ONE COURSE FROM THE ACCOUNTING AREA IS REQUIRED (3 UNITS)	UNITS
CE 502	Construction Accounting and Finance 3
ISE 566	Financial Accounting Analysis for Engineering 3

AT LEAST TWO COURSES FROM THE ENGINEERING MANAGEMENT AREA ARE REQUIRED (6 UNITS)	UNITS
ISE 515	Engineering Project Management 3
ISE 544	Management of Engineering Teams 3
ISE 564	Performance Analysis 3
ISE 565	Law and Finance for Engineering Innovation 3

AT LEAST ONE COURSE FROM THE QUANTITATIVE METHODS AREA IS REQUIRED (3 UNITS)	UNITS
ISE 513	Inventory Systems 3
ISE 514	Advanced Production Planning and Scheduling 3
ISE 525	Design of Experiments 3
ISE 527	Quality Management for Engineers 3
ISE 530	Introduction to Operations Research 3

Electives (12 units):

Four courses for at least 12 units chosen to form a coherent program with the consent of the adviser.

**Health Systems Management Engineering Program
Ethel Percy Andrus Gerontology Center 240
(213) 740-4893**

Program Director: Shinyi Wu, Ph.D.

This program is jointly sponsored by the Epstein Industrial and Systems Engineering Department and the USC Price School of Public Policy and administered by the Epstein Industrial and Systems Engineering Department. This degree is designed for students with sufficiently quantitative bachelor's degrees in engineering, the sciences or applied social science who are interested in operations management and health care applications, and whose career objectives lead to increasing technical management responsibilities in large health care organizations, particularly hospitals. Students with less quantitative social science or other non-technical backgrounds interested in health administration objectives may also want to consider the Master of Health Administration program in the USC Price School of Public Policy.

Master of Science in Health Systems Management Engineering

At least 34 units are required for the degree. Some combinations of courses may require students to complete

more than 34 units. Admitted students may count courses taken for completion of the Graduate Certificate in Health Systems Operations toward this degree. This program is available via distance education.

Applicants to the program are expected to have mathematical competence representative of that provided by an undergraduate degree in engineering; competence in basic descriptive and inferential statistics; competence in microeconomics; and competence in accounting at the level of PPD 516 Financial Accounting for Health Care Organizations, ACCT 509 Concepts of Financial and Management Accounting, or ISE 566 Financial Accounting Analysis for Engineering. Admitted students who do not meet the course work requirements will be assigned courses to complete the deficiencies.

CORE (FOUR COURSES, 14 UNITS)

		UNITS
ISE 507	Six-Sigma Methods and Applications	3
ISE 508	Health Care Operations Improvement	3
PPD 509	Problems and Issues in the Health Field	4
PPD 545	Human Behavior in Public Organizations	4

ECONOMICS AND FINANCE

(SELECT TWO COURSES, AT LEAST 6 UNITS)

		UNITS
ISE 561	Economic Analysis of Engineering Projects	3
ISE 562	Value and Decision Theory	3
ISE 563	Financial Engineering	3
PPD 510a	Financial Management of Health Services	4
PPD 514	Economic Concepts Applied to Health	4

INFORMATION SYSTEMS

(SELECT ONE COURSE, AT LEAST 2 UNITS)

		UNITS
BME 527	Integration of Medical Imaging Systems	3
BME 528	Medical Imaging Informatics	3
ISE 583	Enterprise Wide Information Systems	3
PM 538	Introduction to Biomedical Informatics	3
PPD 511	Health Information Systems	2

MANAGEMENT (SELECT AT LEAST

TWO COURSES, AT LEAST 6 UNITS)

		UNITS
ISE 515	Engineering Project Management	3
ISE 544	Management of Engineering Teams	3
ISE 527	Quality Management for Engineers	3
ISE 564	Performance Analysis	3
PPD 513	Legal Issues in Health Care Delivery	2
PPD 517	Concepts and Practices in Managing Health Care Organizations	2

QUANTITATIVE METHODS (SELECT

TWO COURSES, AT LEAST 6 UNITS)

Select one course, at least 3 units:

		UNITS
ISE 530	Introduction to Operations Research	3
PPD 557	Modeling and Operations Research	4

Select one course, at least 3 units:

		UNITS
ISE 525	Design of Experiments	3
ISE 562	Value and Decision Theory	3
ISE 570	Human Factors in Engineering	3
ISE 580	Advanced Concepts in Computer Simulation	3
PM 603	Structural Equation Modeling	4
PPD 558	Multivariate Statistical Analysis	4

Students may not simultaneously satisfy the Quantitative Methods and Economics and Finance requirements with only ISE 562 Value and Decision Theory. Two courses are needed.

Master of Science in Industrial and Systems Engineering

The Master of Science in industrial and systems engineering is awarded in strict conformity with the general requirements of the Viterbi School of Engineering. This program enhances the technical capabilities of the industrial engineer. The program is available via distance education.

The M.S. program is for students who want to become technical leaders in the field of industrial and systems engineering. Applicants to the program are expected to have a bachelor's degree in an engineering discipline with undergraduate course work in computing, probability and statistics, and engineering economy. Admitted students who do not meet prerequisites will be assigned courses to complete the deficiencies.

A total of 30 units is required for the degree, of which at least 18 units must be completed in the Epstein Department of Industrial and Systems Engineering. Of the 30 units, 20 must be at the 500 level or above.

REQUIRED COURSES

		UNITS
ISE 514	Advanced Production Planning and Scheduling	3
ISE 515	Engineering Project Management	3

ISE ELECTIVES (CHOOSE ONE FROM EACH GROUP)

		UNITS
<i>Systems Design</i>		
ISE 510	Advanced Computational Design and Manufacturing	3
ISE 525	Design of Experiments	3
ISE 527	Quality Management for Engineers	3
ISE 576	Industrial Ecology: Technology-Environment Interaction	3
SAE 541	Systems Engineering Theory and Practice	3
SAE 549	Systems Architecting	3
<i>Production</i>		
ISE 511L	Mechatronic Systems Engineering	3

ISE 513	Inventory Systems	3
ISE 517	Modern Enterprise Systems	3
SAE 551	Lean Operations	3

Systems Performance

ISE 544	Management of Engineering Teams	3
ISE 564	Performance Analysis	3
ISE 570	Human Factors in Engineering	3

Information Systems

ISE 580	Advanced Concepts in Computer Simulation	3
ISE 582	Web Technology for Industrial Engineering	3
ISE 583	Enterprise Wide Information Systems	3

Quantitative Methods

ISE 532	Network Flows	3
ISE 536	Linear Programming and Extensions	3
ISE 538	Elements of Stochastic Processes	3
ISE 563	Financial Engineering	3

Adviser approved electives	9
Total units:	30

Operations Research Engineering Program

Ethel Percy Andrus

Gerontology Center 240

(213) 740-4891

Program Director: Maged Dessouky, Ph.D.

Master of Science in Operations Research Engineering

The Master of Science in operations research engineering is conferred upon candidates who hold bachelor's degrees in engineering, mathematics, science or related fields who successfully complete an integrated program (with departmental approval in advance) of not less than 30 units. The program must include not less than 21 units of industrial and systems engineering courses related to operations research and 9 units of approved electives. Students will be required to make up deficiencies in mathematics and statistics. Additional courses or examinations may be required at the discretion of the department before full admission to the program. The General Test of the Graduate Record Examinations (GRE) is required. Additional information is available from the department. This program is available via distance education.

REQUIRED COURSES

		UNITS
ISE 532	Network Flows	3
ISE 536	Linear Programming and Extensions	3
ISE 538	Elements of Stochastic Processes	3
ISE 580	Advanced Concepts in Computer Simulation	3
ISE 582	Web Technology for Industrial Engineering, or	
ISE 583	Enterprise Wide Information Systems	3

Select at least two of the following

10 courses:

6 units

CE 645	Uncertainty Modeling and Stochastic Optimization	3
ISE 513	Inventory Systems	3
ISE 514	Advanced Production Planning and Scheduling	3
ISE 520	Optimization: Theory and Algorithms	3
ISE 525	Design of Experiments	3
ISE 539	Stochastic Elements of Simulation	3
ISE 562	Value and Decision Theory	3
ISE 563	Financial Engineering	3
ISE 576	Industrial Ecology: Technology-Environment Interaction	3
SAE 541	Systems Engineering Theory and Practice	3
400- or 500-level computer science course, approved by faculty adviser		3
Two electives, approved by faculty adviser		6
		30

ISE ELECTIVES (CHOOSE ONE FROM EACH GROUP)**9 UNITS**

<i>Systems Design (3 units)</i>	
ISE 525	Design of Experiments
ISE 527	Quality Management for Engineers
SAE 541	Systems Engineering Theory and Practice
<i>Information Systems (3 units)</i>	
ISE 580	Advanced Concepts in Computer Simulation
ISE 582	Web Technology for Industrial Engineering
ISE 583	Enterprise Wide Information Systems
<i>Quantitative Methods (3 units)</i>	
ISE 532	Network Flows
ISE 536	Linear Programming and Extensions
ISE 538	Elements of Stochastic Processes
Elective	Chosen with adviser approval
	3
	18

PPD 509	Problems and Issues in the Health Field	4
PPD 513	Legal Issues in Health Care Delivery, and	2
PPD 517	Concepts and Practices in Managing Health Care Organizations, or	2
PPD 514	Economic Concepts Applied to Health	4
PPD 557	Modeling and Operations Research (4), or	
ISE 530	Introduction to Operations Research (3), or	
ISE 562	Value and Decision Theory (3)	3-4
		17-18

Graduate Certificate in Network Centric Systems

See listing under Systems Architecting and Engineering, page 683xx. The program is available via distance education.

Graduate Certificate in Optimization and Supply Chain Management

This abbreviated interdisciplinary program is offered jointly with the Department of Information and Operations Management in the USC Marshall School of Business. See page 164xx for program requirements.

Graduate Certificate in Systems Architecting and Engineering

See listing under Systems Architecting and Engineering, page 683xx. The program is available via distance education.

Graduate Certificate in Transportation Systems

This abbreviated interdisciplinary program is offered jointly with the Astani Department of Civil and Environmental Engineering and the USC Price School of Public Policy. See listing under Civil Engineering, page 626xx.

Graduate Certificate in System Safety and Security

Applications for this program are not currently being accepted.

Courses of Instruction**INDUSTRIAL AND SYSTEMS ENGINEERING (ISE)**

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

ISE 105 Introduction to Industrial and Systems Engineering (2, FaSp) A combination of plant tours, laboratory experiences, and lecture are used to introduce the philosophy, subject matter, aims, goals, and techniques of industrial and systems engineering.

ISE 220 Probability Concepts in Engineering (3, FaSp) Techniques for handling uncertainties in engineering design: discrete and continuous random variables; expectations, probability distributions and transformations of random variables; limit theorems; approximations and applications. *Prerequisite:* MATH 126.

Master of Science in Product Development Engineering

This interdisciplinary program is offered jointly with the Department of Aerospace and Mechanical Engineering. The program is available via distance education. See the listing under Product Development Engineering, page 679xx.

Master of Science in Systems Architecting and Engineering

See the listing under Systems Architecting and Engineering, page 682xx. The program is available via distance education.

Dual Degree Program (M.S., Industrial and Systems Engineering/MBA)

The USC Marshall School of Business in conjunction with the Epstein Department of Industrial and Systems Engineering offers a program leading to the degree of Master of Business Administration/Master of Science in industrial and systems engineering.

This alternative requires 66 units for graduates of industrial and systems engineering undergraduate curricula and leads to both a Master of Science in industrial and systems engineering and the Master of Business Administration. The dual degree provides an education of great depth.

The total number of units required for the MBA program is 48 including all required courses in an MBA program and graduate business electives sufficient to bring the total units completed in the Marshall School of Business to at least 48. Dual degree students may not count courses taken outside the Marshall School of Business toward the 48 units.

Engineer in Industrial and Systems Engineering

Requirements for the Engineer in industrial and systems engineering are the same as set forth in the general requirements.

Doctor of Philosophy in Industrial and Systems Engineering

The degree Doctor of Philosophy in industrial and systems engineering is also offered. See general requirements for graduate degrees.

Graduate Certificates**Graduate Certificate in Engineering Technology Commercialization**

See listing in the Special Educational Opportunities section, page 586xx.

Graduate Certificate in Health Systems Operations

This 17-unit graduate certificate is jointly sponsored by the Epstein Industrial and Systems Engineering Department and the USC Price School of Public Policy (Master of Health Administration program), and administered by the Epstein ISE Department. This certificate is designed for students with bachelor's degrees in applied social science, engineering or the sciences, who are interested in operations management and health care applications. The courses taken for the certificate may be applied later to the Epstein ISE Department's Master of Science in Engineering Management degree, the USC Price School of Public Policy's Master of Health Administration degree or the jointly sponsored M.S. in Health Systems Management Engineering degree subject to approval of the appropriate academic unit. This program is available via distance education.

REQUIRED COURSES (MINIMUM 18 UNITS)		UNITS
ISE 514	Advanced Production Planning and Scheduling	3
ISE 515	Engineering Project Management	3

REQUIRED COURSES		UNITS
ISE 507	Six-Sigma Methods and Applications	3
ISE 508	Health Care Operations Improvement	3

ISE 225 Engineering Statistics I (3, Sp) Sampling distributions; parameter estimation, hypothesis testing; analysis of variance; regression; nonparametric statistics. *Prerequisite:* ISE 220.

ISE 232L Manufacturing Processes (3, Fa) Basic manufacturing processes including casting, machining, forming and welding; current trends in manufacturing processes including polymer, ceramic and composite material processing, and electronic device fabrication; introduction to numerical control and computer integrated manufacturing. *Recommended preparation:* MASC 110L or CHEM 105aL or CHEM 115aL.

ISE 310L Production I: Facilities and Logistics (4, FaSp) Facilities layout and design; material handling and transportation; site selection and sourcing; supply chain management. *Prerequisite:* ISE 330 and ISE 460.

ISE 330 Introduction to Operations Research: Deterministic Models (3, Fa) Introduction to linear programming; transportation and assignment problems; dynamic programming; integer programming; nonlinear programming. *Prerequisite:* MATH 225.

ISE 331 Introduction to Operations Research: Stochastic Models (3, Sp) Stochastic processes; Markov chains; queueing theory and queueing decision models; probabilistic inventory models. *Prerequisite:* ISE 220; *recommended preparation:* ISE 330.

ISE 344 Engineering Team Management (3) Examine team formation and team dynamics including organizational behavior, group dynamics, psychology, and business management, all in the context of engineering development; decision-making and negotiation. Open only to juniors and seniors.

ISE 370L Human Factors in Work Design (4, Fa) Physiological systems and psychological characteristics; ergonomics; anthropometry; effects of the physical environment on humans; occupational safety and health; work methods.

ISE 382 Database Systems: Concepts, Design and Implementation (3, Sp) Concepts in modeling data for industry applications. Designing and implementing robust databases. Querying databases to extract business intelligence; Global Enterprise Resource Planning with databases.

ISE 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

ISE 404 Business and Intellectual Property Law for Engineers (3) (Enroll in CE 404)

ISE 410 Production II: Planning and Scheduling (3, FaSp) Production planning, forecasting, scheduling, and inventory; computer integrated decision systems in analysis and control of production systems. *Prerequisite:* ISE 330.

ISE 415 Industrial Automation (3, Irregular) Traditional (automobile) and modern (computer based) concepts in Industrial Automation. Computer control concepts (sensors, actuators), robotics, flexible manufacturing systems. *Prerequisite:* senior level status.

ISE 422L Configuring Enterprise Resource Planning Systems (3, FaSp) (Enroll in ITP 422L)

ISE 426 Statistical Quality Control (3, Fa) Quantitative aspects of statistical quality control (process control, acceptance sampling by attribute and by variable, rectifying inspection), quality assurance and the management of QC/QA functions. *Prerequisite:* ISE 225.

ISE 435 Discrete Systems Simulation (3, FaSp) Model design to simulate discrete event systems with basic input and output analysis using high order languages, applied to industrial systems analysis and design problems. *Prerequisite:* CSCI 101L and ISE 225.

ISE 440 Work, Technology, and Organization (3, Sp) Impact of technology on work and organizational design; effects of automation; design of improvement programs; information infrastructures; teams; individual behavioral outcomes. Upper division standing.

ISE 455Lx Enterprise Information Portals (3, Sp) (Enroll in ITP 455Lx)

ISE 460 Engineering Economy (3, FaSpSm) Utilizing principles of economic analysis for choice of engineering alternatives and engineering systems. Pre-tax and after-tax economy studies. Upper division standing.

ISE 470 Human/Computer Interface Design (3, Sp) Essentials of human factors and computer interface for the design, development, implementation, and evaluation of integrated media systems.

ISE 482 Engineering Database Applications (3) (Enroll in ITP 482)

ISE 487Lx Data Warehouses and Business Intelligence (3) (Enroll in ITP 487)

ISE 488x Managing Supply Chains with Advanced Planning and Optimization (3) (Enroll in ITP 488x)

ISE 490x Directed Research (1-8, max 12, FaSp) Individual research and readings. Not available for graduate credit.

ISE 495abx Senior Design Project (2-2, FaSp) a: Preparation and development of the senior project proposal. Not available for graduate credit. Senior standing in industrial and systems engineering. *Prerequisites:* ISE 225 and ISE 310 and IOM 435 or ISE 382. *b:* Group work on an industrial engineering design problem in an organization. Not available for graduate credit. Senior standing in industrial and systems engineering. Open only to industrial and systems engineering majors. *Prerequisite:* ISE 435 and ISE 370 or ISE 470.

ISE 499 Special Topics (2-4, max 8) Course content to be selected each semester from recent developments in industrial and systems engineering and related fields.

ISE 500 Engineering Management Decisions and Statistics (3, FaSpSm) Case-based decision and statistical analysis. Framing engineering management situations with statistical methods. Experiments, regression, ANOVA, hypothesis, factor analysis. Open only to fifth-year seniors and master's students.

ISE 502 Construction Accounting and Finance (3) (Enroll in CE 502)

ISE 507 Six-Sigma Methods and Applications (3, FaSpSm) Comprehensive study of Six Sigma and Lean metrics, methods, and systems with their applications to manufacturing, services, quality improvement and management.

ISE 508 Health Care Operations Improvement (3, Sp) Improving operations, patient flow, quality and processes. Students will become familiar with methods for implementing change in health care settings such as hospitals or clinics.

ISE 510 Advanced Computational Design and Manufacturing (3) Study advanced concepts behind computational representations, algorithms, and mathematical foundations, and their applications in computer-aided design and manufacturing. Develop hands-on computational skills in team projects. *Recommended preparation:* bachelor's degree in industrial engineering; programming experience, C++ preferred.

ISE 511L Mechatronic Systems Engineering (3, Sp) Use of mechanical, electrical, and computer engineering, math, and computer science to design of high performance and sophisticated products and processes and systems involving mechatronic. *Recommended preparation:* bachelor's degree in engineering or physical sciences, and preliminary knowledge of programming in C.

ISE 512 Software Management and Economics (3, Fa) (Enroll in CSCI 510)

ISE 513 Inventory Systems (3, Sp) Deterministic and stochastic demand systems with static/dynamic models. Practice in inventory management, computerized procedures, materials requirements planning, just-in-time production, Kanban systems.

ISE 514 Advanced Production Planning and Scheduling (3, FaSm) Advanced concepts in production planning and scheduling including resource allocation, lot sizing, flow shop and job shop scheduling, workforce scheduling and assembly line balancing. *Recommended preparation:* prior knowledge of operations research and probability theory.

ISE 515 Engineering Project Management (3, FaSpSm) Applying industrial and systems engineering skills to problems drawn from industry, while working in teams of 3–4 students. Teach project management skills and provide direct experience in managing and executing a group project.

ISE 517 Modern Enterprise Systems (3, FaSp) Study of various aspects of integrated manufacturing and service enterprises including management, design and production functions, interfaces and related resources and information systems. *Recommended preparation:* manufacturing processes, probability, statistics, computer programming.

ISE 520 Optimization: Theory and Algorithms (3, Fa) Conditions for optimality. Nonlinear programming algorithms for constrained and unconstrained problems. Special problems such as quadratic, separable, fractional, geometric programming. *Prerequisite:* MATH 225 or EE 441.

ISE 525 Design of Experiments (3, FaSp) Planning data collection to investigate relationships between product/process design choices (materials, temperatures, etc.) and performance, empirical modeling to predict performance, identification of the best design choices. *Recommended preparation:* ISE 225.

ISE 527 Quality Management for Engineers (3, FaSp) Principles of quality management, quality philosophies and frameworks, quality leadership and strategic planning, process management, and performance measurements.

ISE 528 Advanced Statistical Aspects of Engineering Reliability (3) Advanced statistical methods applied to reliability engineering. Experimental design analysis and interpretation of multifactor reliability problems.

ISE 530 Introduction to Operations Research (3, Sp) Linear programming, integer programming, transportation and assignment problems, networks, dynamic programming, Markovian models, and queueing. *Prerequisite:* MATH 225, ISE 220.

ISE 532 Network Flows (3, Sp) Tree, path, flow problems, formulation and solution techniques. Methods for minimal cost flows. Applications. *Prerequisite:* ISE 330 or ISE 536.

ISE 536 Linear Programming and Extensions (3, Fa) Linear programming models for resource allocation; simplex and revised simplex methods; duality; sensitivity; transportation problems; selected extensions to large scale, multiobjective, and special structured models. *Prerequisite:* MATH 225 or EE 441.

ISE 538 Elements of Stochastic Processes (3, Sp) Random variables, stochastic processes, birth-and-death processes, continuous and discrete time Markov chains with finite and infinite number of states, renewal phenomena, queueing systems.

ISE 539 Stochastic Elements of Simulation (3, Sp) Simulation techniques combined with probabilistic analysis for solving problems in inventory theory, queueing theory, financial engineering, decision analysis, and other fields having a stochastic element. *Corequisite:* ISE 538.

ISE 543 Case Studies in Systems Engineering (3, FaSp) (Enroll in SAE 543)

ISE 544 Management of Engineering Teams (3, FaSp) Design and management of engineering teams. Group decision-making, motivation, leadership, infrastructural requirements, performance measurement, team diversity, conflict, and integration.

ISE 545 Technology Development and Implementation (3, Fa) Principles and practices of technology development and implementation, with application to products and systems in manufacturing and services.

ISE 549 Systems Architecting (3, FaSp) (Enroll in SAE 549)

ISE 554 Innovation and the Engineering Enterprise (3) Examination of innovation in engineering enterprises including human behavior and human resources, organizational development, engineering management, business structures, financing the enterprise and intellectual property.

ISE 555 Invention and Technology Development (3, Sp) This project-oriented course elaborates on the process of engaging creative thought, tools and techniques for invention, and issues involved in bringing inventions to the production phase. Graded CR/NC.

ISE 556 Stochastic Systems and Finance (3, Sp) (Enroll in EE 556)

ISE 560 Analysis of Algorithms (3, FaSp) (Enroll in CSCI 570)

ISE 561 Economic Analysis of Engineering Projects (3, FaSp) Economic evaluations of engineering systems for both government and private industry; quantitative techniques for evaluating non-monetary consequences; formal treatment of risk and uncertainty. *Prerequisite:* ISE 460.

ISE 562 Value and Decision Theory (3, Fa) Decision making under risk conditions; utility theory; sufficient statistics; conjugate prior distributions; terminal and pre-posterior analysis; Bayesian statistics versus classical statistics.

ISE 563 Financial Engineering (3, Sp) Concepts underlying the economic analysis of engineering projects; applications to call and put options; utility theory and mathematical optimizations models; and simulation. *Recommended preparation:* ISE 220 or an equivalent course in probability.

ISE 564 Performance Analysis (3) Measurement systems for performance analysis. Determination of performance metrics, analytical models, case studies. Cross-industry comparisons, measures for manufacturing and service systems, information and knowledge workers.

ISE 565 Law and Finance for Engineering Innovation (3) Students will identify, formulate and resolve legal, financial and ethical issues affecting innovation in engineering organizations including legal structures, financing and intellectual property rights. Open only to graduate students.

ISE 566 Financial Accounting Analysis for Engineering (3, Sp) Identification, formulation, and solution of financial accounting problems in engineering enterprises. Legal context of financial decisions, process cost determination and allocation, financial reports, and reporting systems. Open only to graduate students.

ISE 567 Collaborative Engineering Principles and Practice (3, Sp) Scientific principles and industrial practices defining how a team of stakeholders should collaboratively work together to reach agreement on complex engineering tasks. Open only to graduate students in engineering.

ISE 568 Machine Learning (3, Fa) (Enroll in CSCI 567)

ISE 570 Human Factors in Engineering (3, Fa) Psychological and physiological characteristics of humans; how they limit engineering design of machines and human-machine systems.

ISE 571 Human Factors Issues in Integrated Media Systems (3) Psychological, cognitive, physical and social characteristics of human factors and how they affect information technology design, development and evaluation for integrated media systems.

ISE 573 Work Physiology (3) Survey of metabolic processes in the performance of physical work, study of individual and environmental factors affecting these processes.

ISE 574 Probabilistic Reasoning (3, Fa) (Enroll in CSCI 573)

ISE 575 Topics in Engineering Approaches to Music Cognition (3, max 6) Computational research in music cognition, including computational methods for music analysis, such as the abstracting and extracting of pitch and time structures. Computational research in expressive performance, the manipulation of parameters (e.g., tempo, loudness, articulation) to focus attention, facilitate parsing, and create emotional affect. Open to graduate engineering students only. *Recommended preparation:* programming experience (C++ or Java), basic signal processing and music theory.

ISE 576 Industrial Ecology: Technology-Environment Interaction (3) Concepts and methods to analyze the environmental impacts of industrial systems, including lifecycle assessment, material flow analysis, design for environment and sustainable consumption.

ISE 580 Advanced Concepts in Computer Simulation (3, Sp) Coverage of various stages of simulation processes using a project and case study oriented approach; an introduction to available simulation tools and modern simulation concepts. *Prerequisite:* ISE 220, ISE 435.

ISE 581 Negotiation For Engineering Management (3, Sp) Decision making techniques for the engineering manager including negotiation principles, contract negotiation, dispute resolution, auctions, bidding, voting and coalition formation.

ISE 582 Web Technology for Industrial Engineering (3, Fa) A fast-paced, project-based introduction to designing and implementing interactive Web applications. Emphasizes skills for building engineering and market research applications requiring information gathering, analysis, representation. *Prerequisite:* ISE 382.

ISE 583 Enterprise Wide Information Systems (3, FaSp) The role of enterprise resource planning systems (ERPs) in an organization and the task of implementing and managing the IS function.

ISE 585 Strategic Management of Technology (3, FaSp) Management skills and tools for technology intensive enterprises. Life cycle analysis of technology from planning through exploitation, obsolescence and renewal.

ISE 587 Risk Analysis (4) (Enroll in PPD 587)

ISE 589 Port Engineering: Planning and Operations (3, Fa) (Enroll in CE 589)

ISE 590 Directed Research (1-12) Research leading to the master's degree; maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

ISE 594abz Master's Thesis (2-2-0) Credit on acceptance of thesis. Graded IP/CR/NC.

ISE 599 Special Topics (2-4, max 9, Fa) Course content will be selected each semester to reflect current trends and developments in the field of industrial and systems engineering.

ISE 645 Uncertainty Modeling and Stochastic Optimization (3, Sp) (Enroll in CE 645)

ISE 651 Seminar in Industrial and Systems Engineering (1, max 4, FaSp) Current research, guest speakers in the field; review papers; guidance in preparing research proposals and special projects. (Duplicates credit in the former ISE 650abc.) Open only to fifth-year seniors and master's students. Graded CR/NC.

ISE 670 Advanced Analysis of Algorithms (3, Fa) (Enroll in CSCI 670)

ISE 671 Randomized Algorithms (3, Sp) (Enroll in CSCI 671)

ISE 690 Directed Research (1-4, max 8, FaSpSm) Laboratory study of specific problems by candidates for the degree Engineer in Industrial and Systems Engineering. Graded CR/NC.

ISE 790 Research (1-12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

ISE 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC.

Informatics Program

Office of Graduate and Professional Programs
Olin Hall of Engineering 106
(213) 740-4488
FAX: (213) 821-0851
Email: masters@gapp.usc.edu
Director: Herbert Schorr, Ph.D.

Assistant Director: Winnie Callahan, Ed.D.

Faculty

Professors: Barry Boehm, Ph.D. (Computer Science, Industrial and Systems Engineering); Ramesh Govindan, Ph.D. (Computer Science, Electrical Engineering); Julia Hagle, Ph.D. (Industrial and Systems Engineering); Carl Kesselman, Ph.D. (Industrial and Systems Engineering, Computer Science); Neno Medvidovic, Ph.D. (Computer Science); Shri Narayanan, Ph.D. (Electrical Engineering, Computer Science, Linguistics, Psychology); Viktor Prasanna, Ph.D. (Electrical Engineering); Suvrajeet Sen, Ph.D. (Industrial and Systems Engineering, Electrical Engineering, Computer Science); Cyrus Shahabi, Ph.D. (Computer Science); Gaurav Sukhatme, Ph.D. (Computer Science, Electrical Engineering); Milind Tambe, Ph.D. (Computer Science, Industrial and Systems Engineering); Priya Vashishta, Ph.D. (Physics, Computer Science, Biomedical Engineering)

Assistant Professor: Yan Liu, Ph.D. (Computer Science)

Research Professors: Herbert Schorr, Ph.D. (Computer Science); William Swartout, Ph.D. (Computer Science)

Research Associate Professors: Clifford Neuman, Ph.D. (Computer Science)

Senior Lecturers: Blaine Burnham, Ph.D.; Roger Schell, Ph.D.

Lecturer: Lyndon Pierson

Master of Engineering in Cyber Security

Program Director: Blaine Burnham, Ph.D.

The Master of Engineering (M.Eng.) in Cyber Security is intended for graduate students who desire to: obtain jobs in which computer network operations knowledge and skills are required and continue an education path toward a doctorate degree with focus on information security. It is also for individuals who are in degree programs or job fields that have some responsibility with information security and who desire enhanced knowledge and skills.

Upon completion of this program, students will have learned the fundamentals of developing, engineering and operating secure information systems. They will be well versed in the challenges and problems of secure operating systems, secure applications, secure networking, use of cryptography and key management. They will understand how to develop a security policy, and how policy drives technology decisions. Students will gain the knowledge and skills necessary to administer environments which require high levels of information security, both from the standpoint of the principles of information protection and the role and application technology has in meeting the goal of information protection. Students will understand the value of assets, the business model of threat, the threat matrix,

mitigation strategy, and how all of this integrates with the core organizational mission. They will understand why some information security plans succeed and why others fail. Students will have hands-on experience in situations that simulate real world scenarios with all technical and theoretical situations through extensive laboratory work, which will be designed by current and former information security practitioners.

Requirements for completion (27 units minimum)

REQUIRED COURSES (18 UNITS)		UNITS
INF 520	Foundations of Information Security	3
INF 521	Applications of Cryptography to Information Security Problems	3
INF 522	Policy: The Foundation for Successful Information Assurance	3
INF 523	Assurance in Cyberspace and Applied to Information Security	3
INF 524	Distributed Systems and Network Security	3
INF 527	Secure Systems Engineering	3
ELECTIVE COURSES (CHOOSE THREE, 9-10 UNITS)		UNITS
CSCI 530	Security Systems	4
CSCI 531	Applied Cryptography	3
INF 525	Trusted System Design, Analysis and Development	3
INF 526	Secure Systems Administration	3
INF 528	Computer and Network Forensics	3

Courses of Instruction

INFORMATICS PROGRAM (INF)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

INF 520 Foundations of Information Security (3)

Threats to information systems; technical and procedural approaches to threat mitigation; secure system design and development; mechanisms for building secure security services; risk management. *Recommended preparation:* Background in computer security preferred. Recommended previous courses of study include computer science, electrical engineering, computer engineering, management information systems, and/or mathematics.

INF 521 Application of Cryptography to Information Security Problems (3)

Application of cryptography and cryptanalysis for information assurance in secure information systems. Classical and modern cryptography. Developing management solutions. *Recommended preparation:* Previous degree in computer science, mathematics, computer engineering, or informatics; understanding of number theory and programming background are helpful.

INF 522 Policy: The Foundation for Successful Information Assurance (3)

Policy as the basis for all successful information system protection measures. Historical foundations of policy and transition to the digital age. Detecting policy errors, omissions and flaws. *Recommended preparation:* Background in computer security, or a strong willingness to learn. Recommended previous courses of study include degrees in computer science, electrical engineering, computer engineering, management information systems, and/or mathematics.

INF 523 Assurance in Cyberspace and Applied to Information Security (3)

Assurance as the basis for believing an information system will behave as expected. Approaches to assurance for fielding secure information systems that are fit for purpose. *Recommended preparation:* Prior degree in computer science, electrical engineering, computer engineering, management information systems, and/or mathematics. Some background in computer security preferred.

INF 524 Distributed Systems and Network Security (3)

Fundamentals of information security in the context of distributed systems and networks. Threat examination and application of security measures, including firewalls and intrusion detection systems. *Recommended preparation:* Prior degree in computer science, mathematics, computer engineering, or informatics. It is recommended that students have a working understanding of communication networks and computer architecture, and some programming facility.

INF 525 Trusted System Design, Analysis and Development (3)

Analysis of computer security and why systems are not secure. Concepts and techniques applicable to the design of hardware and software for Trusted Systems. *Recommended preparation:* Prior degree in computer science, mathematics, computer engineering, or informatics; advanced knowledge of computer architecture, operating systems, and communications networks will be valuable.

INF 526 Secure Systems Administration (3) The administrator's role in information system testing, certification, accreditation, operation and defense from cyber attacks. Security assessment. Examination of system vulnerabilities. Policy development. *Recommended preparation:* Previous degree in computer science, mathematics, computer engineering, informatics, and/or information security undergraduate program. Also, it is highly recommended that students have successfully completed course work involving policy and network security.

INF 527 Secure Systems Engineering (3) The process of designing, developing and fielding secure information systems. Developing assurance evidence. Completion of a penetration analysis. Detecting architectural weaknesses. Case studies. *Recommended preparation:* Previous degree in computer science, mathematics, computer engineering, or informatics; moderate to intermediate understanding of the fundamentals of information assurance, and distributed systems and network security. Knowledge and skill in programming.

INF 528 Computer and Network Forensics (3) Preservation, identification, extraction and documentation of computer evidence stored on a computer. Data recovery; cryptography; types of attacks; steganography; network forensics and surveillance. *Recommended preparation:* Previous degree in computer science, mathematics, computer engineering, or informatics; a working understanding of number theory and some programming knowledge will be helpful.

Information Technology Program

Olin Hall 412

(213) 740-4542

Email: itp@usc.edu

itp.usc.edu

Director: Michael Crowley, Ph.D.

Instructors: Patrick Dent, M.S.; Joseph Greenfield, M.S.; Trina Gregory, B.A.; Nitin Kale, M.S.; Sanjay Madhav, B.S.; Tom Sloper, B.A.; Chi So, M.S.; Ashish Soni, M.S.; Richard Vawter, M.S.; Lance Winkel, MFA

Adviser: Lisa Mataczynski, Ed.D.

ITP courses are open to all USC students.

Minors

ITP minors are open to undergraduate students in all majors.

To apply for a minor, students should meet the regular admissions standards and have a declared USC major. Students will complete an application for the minor with the Viterbi School of Engineering. For

specific information on admission and application procedures, contact the Information Technology Program at (213) 740-4542.

ITP Minors:

3-D Animation

Applied Computer Security

Computer and Digital Forensics

Enterprise Information Systems

Innovation: The Digital Entrepreneur

Video Game Design and Management

Video Game Programming

Web Technologies and Applications

Viterbi School of Engineering Students

The "x" designation indicates that engineering students require prior departmental approval to count 100-level and above ITP courses for major credit.

Minor in 3-D Animation

The 3D animation minor is a cross-disciplinary program merging theoretical concepts and state of the art techniques to prepare students to apply 3D animation across

a wide range of industry applications. The courses integrate three major disciplines — cinematic arts, fine arts and information technology.

Requirements for completion (five core courses plus minimum 9 units of electives)

Minimum units: 22

CORE COURSES (13 UNITS)		UNITS
CTAN 330	Animation Fundamentals	2
CTAN 451	History of Animation	2
FADW 101	Introduction to Drawing	4
ITP 215Lx	3D Modeling, Animation, and Special Effects	2
ITP 414x	Seminar and 3D Portfolio Development	3
ELECTIVE COURSES (9 UNITS)		UNITS
ITP 305x	Advanced 3D Modeling, Animation, and Special Effects	3
ITP 315x	3D Character Animation	3

ITP 360x	3D Compositing and Visual Effects	3
ITP 470x	Information Technology Practicum	3-4
CTAN 452	Introduction to 3-D Computer Animation	2

Minor in Applied Computer Security

The minor in applied computer security combines both theoretical concepts and technical skills to prepare students for a career in information security while incorporating their major field of work. Students will study various areas of computer security, including hacking, ethics, forensics, networking and security management. Electives are available depending on the students' academic and professional goals.

Requirements for completion (five core courses plus one elective)

Minimum units: 18

REQUIRED COURSES (14 UNITS)		UNITS
ITP 125LX	From Hackers to CEOs: Introduction to Information Security	2
ITP 325x	Ethical Hacking and Systems Defense	3
ITP 357x	Enterprise Network Design	3
ITP 370x	Information Security Management	3
ITP 375x	Digital Forensics	3

ELECTIVE (4 UNITS)		UNITS
ITP 425x	Web Application Security	4
ITP 457	Network Security	4
ITP 475x	Advanced Digital Forensics	4

Minor in Computer and Digital Forensics

The computer and digital forensics minor combines both theoretical concepts and practical skills to prepare students for a career as a digital forensics investigator. Students will study various areas of cyber-forensics, including forensic methodologies and processes, digital evidence-gathering and preservation, investigations and examinations, and court presentation. Electives are available depending on the students' academic and professional goals.

Requirements for completion (three core courses plus minimum 12 units of electives)

Minimum units: 21

REQUIRED COURSES (THREE COURSES, 9 UNITS)		UNITS
ITP 125LX	From Hackers to CEOs: Introduction to Information Security	2
ITP 375x*	Digital Forensics	3
ITP 475x*	Advanced Digital Forensics	4

LAW AND POLICY ELECTIVE (CHOOSE ONE, 3-4 UNITS)		UNITS
LAW 200	Law and Society	4
CE 404	Business and Intellectual Property Law for Engineers	3

PPD 342	Crime and Public Policy	4
SOCI 353	Public Policy and Criminal Justice	4

FORENSIC ELECTIVES (CHOOSE TWO, 6 UNITS)

		UNITS
ITP 445*	Macintosh, OSX and iOS Forensics	3
ITP 446*	Enterprise and Network Forensics	3
ITP 447*	Mobile Device Security and Forensics	3
ITP 448*	Electronic Discovery	3

ELECTIVE COURSE (CHOOSE ONE, 3-4 UNITS)

		UNITS
CSCI 485*	File and Database Management	3
IR 304	Espionage and Intelligence	4
IR 381	Introduction to International Security	4
ISE 382*	Database Systems: Concepts, Design and Implementation	3
ITP 320x	Enterprise Wide Information Systems	3
PSYC 463*	Criminal Behavior	4
PSYC 465*	Introduction to Forensic Psychology	4

*Prerequisite required

Minor in Enterprise Information Systems

The 21st century has seen tremendous growth in global enterprises, which has required robust and integrated information systems to support streamlined business processes. These Enterprise Information Systems, also known as Enterprise Resource Planning (ERP) systems, have continued to mature and dominate the information systems of corporations. Most Fortune 500 companies have adopted ERP systems. This minor combines business process management and information technology to prepare students for technical careers as well as business consulting in the ERP domain. Students will study various areas of ERP implementation, configuration, business intelligence, security and supply chain management. Electives are available depending on the students' academic and professional goals.

Requirements for completion (three core courses plus minimum 7 units of electives)

Minimum units: 16

REQUIRED COURSES (10 UNITS)		UNITS
ITP 320x	Enterprise Wide Information Systems	4
ITP 422	Configuring Enterprise Resource Planning Systems	3
ITP 454x	Enterprise Resource Planning, Design, and Implementation	3

ELECTIVES (CHOOSE MINIMUM 6 UNITS OF WHICH MINIMUM 3 UNITS SHOULD HAVE ITP PREFIX)

		UNITS
ACCT 371a	Introduction to Accounting Systems	2
ACCT 371b	Introduction to Accounting Systems	2
ACCT 410x	Foundations of Accounting	4
ACCT 478	Accounting Systems Design	4

ACCT 479	Accounting Systems Development	4
BUAD 311	Operations Management	4
IOM 431	Managing the Digital Revolution for Your Business	4
IOM 433	Business Information Systems Analysis and Design	4
IOM 435	Business Database Systems	4
ISE 382	Database Systems: Concepts, Design and Implementation	3
ITP 421x	Advanced Programming for Enterprise Information Systems	3
ITP 455Lx	Enterprise Information Portals	3
ITP 470x	Information Technology Practicum	1-4, max 8
ITP 486	Securing and Auditing Enterprise Resource Planning Systems	3
ITP 487	Data Warehouses and Business Intelligence	3
ITP 488x	Managing Supply Chains with Advanced Planning and Optimization	3
PPD 318	Financial Accounting in Public and Nonprofit Organizations	4

Minor in Innovation: The Digital Entrepreneur

The Minor in Innovation: The Digital Entrepreneur is jointly sponsored by the Information Technology Program in the Viterbi School of Engineering and the Lloyd Greif Center for Entrepreneurial Studies in the USC Marshall School of Business. The minor is designed for students from a range of backgrounds who are interested in starting their own digital ventures, working for start-up companies, or pursuing traditional jobs with large corporations and consulting firms that may involve launching new digital business units. Students will learn all major elements of launching a digital venture including ideation, feasibility analysis, high-tech product management, online customer acquisition, technology implementation, online business models and monetization. Students will work on launching a digital venture in a team-based environment in the capstone class.

The Information Technology Program in the Viterbi School of Engineering handles advising and admissions relating to the minor, consulting as needed with the Grief Center for Entrepreneurial Studies in the Marshall School of Business.

Requirements for completion (six core courses plus minimum 6 units of electives)

Minimum units: 26

REQUIRED COURSES (20 UNITS)		UNITS
BAEP 451	The Management of New Enterprises	4
BAEP 452*	Feasibility Analysis	4
ITP 466x	Building the High-Tech Startup	4
ITP 476x	Technologies for Interactive Marketing	4
ITP 496x**	The Digital Startup Launchpad Lab	2
(capstone course; corequisite: BAEP 496)		
BAEP 496**	The Digital Startup Launchpad	2

ELECTIVE COURSES (6 UNITS)		UNITS
BAEP 423	Management of Small Businesses	4
BAEP 460	Seminar in Entrepreneurship	2
BUAD 304	Leading Organizations	4
BUAD 307	Marketing Fundamentals	4
IOM 462	Managing a Small Business on the Internet	2
ITP 310Lx*	Design for User Experience	2
MKT 425*	Direct Response and Internet Marketing	4

*Prerequisite required

*ITP 496 and BAEP 496 must be taken in the same semester.

Minor in Video Game Design and Management

The video game design minor integrates theoretical concepts and practical skills to prepare students for a career in interactive entertainment, specifically the video game industry. Through integration of two major disciplines (cinema and information technology), students will be exposed to a variety of design concepts related to creating video games including: level design, game-play control, user interface, multiplayer, game mechanics, and storytelling. As opposed to the video game programming minor where students will be writing code and programming game engines, students in the video game design and management minor will apply design concepts to different game genres and use game design software tools to create a working demo of a video game during the course of the minor program.

Requirements for completion (seven core courses)

Minimum units: 24

REQUIRED COURSES (24 UNITS)		UNITS
CTIN 483	Introduction to Game Development	4
CTIN 484L*	Intermediate Game Development	2
CTIN 488	Game Design Workshop	4
CTIN 489*	Intermediate Game Design Workshop	2
ITP 280	Video Game Production	4
ITP 391x	Designing and Producing Video Games	4
ITP 491x	Level Design and Development for Video Games	4

*CTIN 483 and CTIN 488 are prerequisites; enrollment in CTIN 484L and CTIN 489 is concurrent.

Minor in Video Game Programming

The video game programming minor integrates the theoretical concepts and practical skills to prepare students for a career in interactive entertainment, specifically the video game industry. Through integration of two major disciplines (computer science and information technology), students will be exposed to a variety of programming concepts related to creating video games including: 3-D graphics, artificial intelligence, particle systems, rendering, collision detection, game algorithms, physics concepts, and math formulas. In contrast to the video game design minor where the focus is applying design concepts and using software design tools, students in the video game programming

minor will evaluate, write and debug code, in addition to creating a game engine during the course of the minor.

This minor features an optional capstone that is a team-based, year-long game development project. Students are only eligible for the capstone after having completed all the required courses as well as the required three ITP elective units. The capstone must be taken in both the fall and spring semesters of a single academic year.

Requirements for completion (four core courses plus 6 units of electives)

Minimum units: 19

CORE COURSES (13 UNITS)		UNITS
ITP 165x*	Introduction to C++ Programming	2
ITP 365x*	Managing Game Data	3
ITP 380	Video Game Programming	4
ITP 485	Programming Game Engines	4

ELECTIVE COURSES (6 UNITS —

3 UNITS MUST BE ITP)		UNITS
ITP 382x	Mobile Game Programming	3
ITP 435x	Professional C++	3
ITP 438x	Graphics Shader Programming	3
ITP 484x	Multiplayer Game Programming	3
CSCI 491abL**	Final Game Project	4-2

*ITP 165x and ITP 365x can be waived for students who have taken CSCI 103 and CSCI 104. However, these students must take an additional elective course in order to have the appropriate number of upper-division units.

**Optional capstone. See details above for requirements.

Minor in Web Technologies and Applications

The web technologies and application minor is designed to introduce students to the Web publishing and development fields. Upon completion of the minor, students will be able to design and develop Websites using major Web technologies, standards and applications. Students can use the theoretical concepts and practical applications of Web technologies not only in the Web industry, but also within a different major field of study. The broad areas of study include Web publishing, Web programming, databases and multimedia. Electives will be chosen based on the students' academic and professional goals.

Students should meet the regular admissions standards and have a declared USC major.

Requirements for completion (four core courses plus two electives)

Minimum units: 18

CORE COURSES (13 UNITS)		UNITS
ITP 104x	Web Publishing	2
ITP 300x	Database Web Development	3
ITP 301Lx	Interactive Web Development	4
ITP 460x	Web Application Project	4

ELECTIVE (TWO COURSES)		UNITS
ITP 310x	Design for User Experience	2
ITP 404x	Modern Technologies of Web Development	3
ITP 411x	Multimedia and Video Production	3
ITP 425x	Web Application Security	4
ITP 470x	Information Technology Practicum	3

Courses of Instruction

INFORMATION TECHNOLOGY PROGRAM (ITP)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

All ITP courses are open to non-engineering majors. The "x" designation indicates that engineering students require prior departmental approval to count 100-level and above ITP courses for major credit.

ITP 031x Introduction to Microsoft Excel (1) Spreadsheet applications on microcomputers using Microsoft Excel; fundamentals of problem solving and data analysis using a wide variety of spreadsheet features. Not available for degree credit. Graded CR/NC.

ITP 050x Microsoft Power Point (1) Overview of how to create professional and colorful screen presentations, overhead transparencies, outlines and 35 mm slides using a presentation graphics program. Not available for degree credit. Graded CR/NC.

ITP 065x Microsoft Access (1) Microsoft Access will allow students to learn how to plan, define, create, and modify a database in the Windows environment. Not available for degree credit. Graded CR/NC.

ITP 090x Introduction to Adobe Photoshop (2, FaSp) Basic concepts of colors; color calibration tools; scanning, importing and exporting images; painting, editing, fill, and type tools; using layers, masks, filters, and color correction. Not available for degree credit. Graded CR/NC.

ITP 101x Introduction to Information Technology (4, FaSp) Introduction to computer hardware, operating systems, networks, programming. Survey of application software in business and industry. Computer issues in the work place and society.

ITP 104Lx Web Publishing (2) Web publishing using HTML, CSS and other Web technologies. Concepts and theory of Web site creation, page layout and production. Introduction to advanced topics. Not available for major credit in electrical engineering or computer science.

ITP 105x Introduction to Computer Technologies and Applications (2) The course offers a primer in computer technologies and applications essential to academic and career success. Not available for major credit to engineering majors.

ITP 109x Introduction to Java Programming (2, FaSp) Introduction to object-oriented software design for business problems. Creation of console applications, windowed applications, and interactive Web applets. Not available for major credit in electrical engineering or computer science.

ITP 110x Introduction to C Programming (2) Fundamentals of C; a survey of C compilers; the role of C in developing Unix and other operating systems. *Prerequisite:* knowledge of a higher-level language.

ITP 115 Programming in Python (3, FaSp) Learn how to program using Python. With its high level data structures and clear syntax, Python is an ideal first language.

ITP 125Lx From Hackers to CEOs: Introduction to Information Security (2, FaSp) Introductory course in computer security. Fundamentals of information security management. Threats to information integrity. Ethical hacking concerns and practice. Policies and Procedures. Not available for major credit in Engineering.

ITP 140 Mobile Application Technologies (2, FaSp) Technologies, devices, operating systems, and tools of mobile applications, as well as the mobile industry. Students will use tools to create apps for different mobile devices.

ITP 150x Introduction to Visual BASIC (2) This course provides students with no previous programming experience with the basics for and creating their own interactive windows applications using visual programming techniques. *Prerequisite:* high school algebra.

ITP 165x Introduction to C++ Programming (2) Fundamentals of C++ syntax and semantics, including function prototypes, overloading, memory management, abstract data types, object creation, pointers to class members, and I/O streams. *Prerequisite:* any high-level programming language.

ITP 168x Introduction to MATLAB (2) Fundamentals of MATLAB: a high-performance numeric computation and visualization environment. Overview of linear algebra and matrix manipulation; using 2-D and 3-D plotting routines; programming in MATLAB; basic numerical analysis. *Recommended preparation:* MATH 118x or MATH 125.

ITP 204x Fundamentals of Web Development (4) Programming fundamentals necessary for Web development. Scripting languages, development tools and techniques for creating interactive, dynamic Web pages. *Prerequisite:* ITP 104x.

ITP 209x Object Oriented Programming Using Java (3) Basic object-oriented concepts and object-oriented analysis and design as they relate to Java technology. Object-oriented programming for developing applications with Java technology. *Prerequisite:* ITP 109x.

ITP 210x Multimedia Applications for Windows (2) Focuses on creating powerful presentations with affordable multimedia hardware and software; integrates sound, video and animation into windowing environment. *Prerequisite:* ITP 101x.

ITP 211x Multimedia Authoring (2) Introduction to interactive multimedia programming; integrated audio, graphics, video, and animation for interactive multimedia; object oriented programming, web, CD-ROM, and hybrid applications. *Recommended preparation:* programming experience.

ITP 212x Digital Media Design and Management (3) Design and composition as it applies to digital media, including web, CD, interactivity, and motion graphics. Media management, client relations, project and asset management.

ITP 215Lx 3-D Modeling, Animation, and Special Effects (2, FaSp) Developing a 3-D animation from modeling to rendering: Basics of surfacing, lighting, animation and modeling techniques. Advanced topics: compositing, particle systems, and character animation. Not available for major credit in engineering. *Recommended preparation:* knowledge of any 2D paint, drawing or CAD program.

ITP 216x Web Animation and Interactivity (2, FaSp) 2-D vector graphics for web and animation. Scripting techniques for interactivity. Action Script syntax, logic and control. *Recommended preparation:* basic computer knowledge.

ITP 220Lx Digital Video Editing and Motion Graphics (2) Techniques for digital, non-linear video editing and compositing. Special video effects, rendering and compression for multimedia, the Web, and broadcast. Not available for major credit for EE or CSCI majors. *Recommended preparation:* general PC-based computer proficiency.

ITP 225x The UNIX System (2) UNIX system concepts; the Shell command language; utilities, editors, file structure, and text formatters. C Shell, Bourne Shell, and the awk programming language. *Prerequisite:* ITP 101x.

ITP 230x Video Game Quality Assurance (4, FaSp) Survey game software development through quality assurance and in-depth analysis of the development cycle with a focus on bug testing systems and methodologies. Not available for major credit in electrical engineering.

ITP 260x Internet Technologies (4) Overview of emerging technologies on the Internet including multimedia components, networking, security tools, web-based databases, and wireless systems.

ITP 280x Video Game Production (4, FaSp) History of video games; overview of game genres; phases of video game development (concept, preproduction, production, post-production); roles of artists, programmers, designers, and producers.

ITP 300x Database Web Development (3, Fa) Fundamental theory and technologies for creating dynamic, database-driven Websites: Structured Query Language. *Prerequisite:* ITP 104x; *recommended preparation:* ITP 204x.

ITP 301Lx Interactive Web Development (4, Sp) Design, programming techniques for creating interactive, dynamic Web pages. Web development technologies and techniques include scripting fundamentals, JavaScript, dynamic HTML, Actionscript, and Flash. Not available for major credit in engineering. *Prerequisite:* ITP 104x.

ITP 302x Advanced Web Publishing (2) Advanced topics in Web Publishing including HTML5, CSS3, and jQuery. Concept and theory of responsive design. Miscellaneous Webmaster topics including analytics, podcasting and search engine optimization. *Prerequisite:* ITP 104x.

ITP 304L Technologies for Building Online Political Campaigns (4) Key technology components necessary in building a successful online political campaign. Fundamentals of implementing, marketing and managing an online political campaign.

ITP 305x Advanced 3D Modeling, Animation, and Special Effects (3, Sp) Advanced modeling, surfacing, and animation techniques as well as dynamics, scripting, and other advanced 3D automation procedures. Not available for major credit in engineering. *Prerequisite:* ARCH 207a or ITP 215Lx.

ITP 309x Developing Enterprise Applications Using Java (3) Java architecture and key logic for business components; Servlets, Server Pages and Enterprise Java Beans technologies, to design and construct secure and scalable n-tier applications.

ITP 310Lx Design for User Experience (2, Fa) Concepts, techniques, practices, workflows and tools for design from the perspective of user experience. Not available for major credit in engineering. *Prerequisite:* ITP 104x.

ITP 315x 3D Character Animation (3) Advanced exploration of the process of bringing 3D characters to life from concept to model, and through production to finished performance. Not available for major credit in electrical engineering. *Prerequisite:* ITP 215Lx.

ITP 320x Enterprise Wide Information Systems (4, FaSp) The role Information Systems play in an organization. Integration of Business Processes by using Enterprise Resource Planning Systems (ERP).

ITP 321x Programming Enterprise Wide Information Systems (2) Programming enterprise applications using ABAP/4. Topics include: ABAP/4 Development Workbench, Data Dictionary, Subroutines and Functions, database tables, data objects, and designing reports. *Prerequisite:* ITP 320Lx.

ITP 325x Ethical Hacking and Systems Defense (3, FaSp) Hacking from a defense perspective. Hacker ethics and laws. Penetration testing. Vulnerability assessment. Securing workstations, servers, and networks. Not available for major credit in engineering. *Prerequisite:* ITP 125Lx.

ITP 330x Interactive 3-D Environments (3) Introduces techniques to design and develop interactive, multi-user 3-D, 2-D, and textual environments, for business, personal communications, education, and gaming for the web and CD. *Prerequisite:* ITP 211x.

ITP 340x Mobile App Design (3) Fundamental concepts, techniques, practices, workflows, and tools associated with the practice of user experience design for mobile apps. *Prerequisite:* ITP 140.

ITP 342L Mobile Application Development (3) Develop applications for mobile devices such as iPhones and iPads (iOS) and other smart phones (Android). Build a mobile application from start to finish. *Prerequisite:* ITP 140.

ITP 344x Advanced Topics in Mobile App Development (3) Advanced topics in mobile app development such as using REST services, security, cloud integration, NFC (near field communication), wireless networking for mobile apps, monetizing apps, and the latest frameworks to create advanced apps. *Prerequisite:* ITP 342L.

ITP 345x Video Game Art and Animation (3) Create art and modeling for video games. Model, texture, light, and animate a sequence to be used in a video game engine. *Prerequisite:* ITP 215Lx.

ITP 357x Enterprise Network Design (3) Network technologies. Strategies for managing thousands of systems. Routers and managed switches. Integrated operating systems (IOS). Windows and Linux networking. Subnets. Not available for major credit in engineering. *Prerequisite:* ITP 125Lx.

ITP 360x 3D Compositing and Visual Effects (3) Advanced techniques for 3D animation and visual effects development including 3D pre-visualization, match moving, dynamics, multi-pass rendering, and digital compositing. Not available for major credit in engineering. *Prerequisite:* ITP 215Lx.

ITP 370x Information Security Management (3, Sp) Management techniques for security projects. Security team management. Laws and regulations for information security. Disaster recovery. Security Audits. Not available for major credit in engineering. *Prerequisite:* ITP 125Lx.

ITP 375x Digital Forensics (3, Fa) Forensic science techniques. Digital evidence preservation and presentation. Processes and methodologies for digital analysis. Not available for major credit in engineering. *Prerequisite:* ITP 125Lx.

ITP 377x Linux System Administration (3) Installation, customization and administration of Linux in a networked environment. *Prerequisite:* ITP 225x.

ITP 380 Video Game Programming (4, FaSp) Underlying concepts and principles required for programming video games (topics include vectors, transformations, 3-D math, geometric primitives, matrices). *Prerequisite:* CSCI 102L or ITP 165x.

ITP 382x Mobile Game Programming (3) Concepts and techniques required to develop games for smart-phones and tablets. Topics include sprites, collision detection, mobile input, artificial intelligence, and augmented reality games. *Prerequisite:* CSCI 102L.

ITP 383 Database Systems: Concepts, Design and Implementation (3, Sp) (Enroll in ISE 382)

ITP 385x IT Consulting and Professional Services (3) Information Technology (IT) Consulting life cycle. Client relationships. Problem evaluation, solution development and implementation. Systems analysis and evaluation. Third party consulting. Not available for major credit in engineering. *Prerequisite:* ITP 101 or ITP 125.

ITP 391x Designing and Producing Video Games (4) Key elements for designing effective video games and the processes involved in early development; roles of producer and manager, marketing and sales, and considerations pertaining to licensing and franchises. *Prerequisite:* ITP 280.

ITP 404x Modern Technologies of Web Development (3, Fa) Provide students with the necessary skills to build web applications using modern techniques, frameworks, libraries, and tools that are used among developers within the industry. *Prerequisite:* ITP 301Lx.

ITP 411x Multimedia and Video Production (3, FaSp) Visual communication and storytelling are essential skills, especially in the digital age. Overview of techniques and software to create, edit, and deliver compelling images and video. Not available for major credit in Engineering.

ITP 414x Seminar and 3D Portfolio Development (3, Sp) Advanced processes for developing 3D animation, showcasing skill sets, and qualifications for positions within the 3D animation industries; including demo reel, media, and website creation. Not available for major credit in engineering. *Prerequisite:* ITP 215Lx and ITP 305x or ITP 315x or ITP 360x.

ITP 415x 3-D Design and Prototyping (2) Explore the range of 3-D printing and prototyping technologies, and their application in modern industrial, design, and creative fields.

ITP 420x Structuring Data for the Web (3) Building web applications focused on content in web documents; develop XML document using DTD, DOM, XSL; facilitate data interchange between Websites. *Prerequisite:* ITP 300x.

ITP 421x Advanced Programming for Enterprise Information Systems (3) Object Oriented Programming for Enterprise information systems. Working with classes, objects, database tables, SQL. Designing reports and Graphical user interfaces. Leveraging service oriented architecture. Not available for credit for engineering majors. *Prerequisite:* ITP 320x; *recommended preparation:* object oriented programming.

ITP 422L Configuring Enterprise Resource Planning Systems (3) Business process integration is the core advantage of using ERP systems. Analyze, configure, and test business processes for a company from the ground up. (Duplicates credit in former ITP 322.) *Prerequisite:* ITP 320Lx or ISE 583.

ITP 425x Web Application Security (4) Web application security techniques. eCommerce vulnerabilities. Online fraud. Solutions to spam and identity theft. Not available for major credit in Engineering. *Prerequisite:* CSCI 351 or ITP 301Lx or ITP 325x.

ITP 435x Professional C++ (3) Applications of advanced concepts in C++ including lambda expressions, template metaprogramming, secure coding, parallel programming techniques, and the boost library. *Prerequisite:* CSCI 102L.

ITP 438x Graphics Shader Programming (3, Fa) Implementation of advanced graphical effects with shaders in a production environment. Topics include math for shaders, lighting, mapping techniques, procedural generation, and global illumination. *Prerequisite:* CSCI 101.

ITP 440x Enterprise Data Management (3) Advanced concepts in database management; design, customization, maintenance and management of a database in an enterprise environment. *Prerequisite:* IOM 435 or ITP 300.

ITP 442x Mobile App Project (4) Capstone course for Mobile App Development minor. Work in project teams to develop new mobile app from start to finish. Meet with client, create app design, develop, test, and demonstrate app to client. *Prerequisite:* ITP 140.

ITP 444 Social Game Development Workshop (2) Hands-on development of video games for social media; realities of the social games market; development tools and processes. *Prerequisite:* ITP 101.

ITP 445 Macintosh, OSX, and iOS Forensics (3) Digital forensics. Digital evidence. Apple. Mac. Macintosh. OSX. iOS. iPhone. iPad. *Prerequisite:* ITP 375x.

ITP 446 Enterprise and Network Forensics (3, Fa) Enterprise server analysis. Network device forensic analysis. SQL server. Microsoft servers. Linux servers. Exchange servers. LAMP servers. *Prerequisite:* ITP 375x; *recommended preparation:* ITP 357x.

ITP 447 Mobile Device Security and Forensics (3, Sp) Mobile device security. Mobile device forensics. Android. Blackberry. Windows phone. Symbian. *Prerequisite:* ITP 375x.

ITP 448 Electronic Discovery (3, Sp) Electronic Discovery. eDiscovery. Electronically stored information. Civil litigation and discovery. Electronic evidence. *Prerequisite:* ITP 375x and LAW 200.

ITP 454x Enterprise Resource Planning, Design, and Implementation (3) Process and requirements to implement an Enterprise Resource Planning System (ERP). Set up server, implement ERP system, then transfer and configure database for case company. Not for major credit for Electrical Engineering students. *Prerequisite:* ITP 320x.

ITP 455Lx Enterprise Information Portals (3) Enterprise Information Portals for various case companies will be explored. Student will design, install, configure and administer core functionalities of a basic portal solution. *Prerequisite:* ITP 320Lx.

ITP 457 Network Security (4) Network policy and mechanism, firewalls, malicious code; intrusion detection, prevention, response; cryptographic protocols for privacy; risks of misuse, cost of prevention, and societal issues. *Prerequisite:* ITP 357x.

ITP 460x Web Application Project (4, Sp) Skills to plan, analyze, build, and launch professional Web sites with actual clients. Includes project management, documentation, technology assessment, security, UI, Q/A, and various methodologies. *Recommended preparation:* One 300-level Web minor course.

ITP 466 Building the High Tech Startup (4) Teach students the basic technologies and processes involved in building web and mobile startups. Students will be introduced to the different aspects of building a web startup including online business models, Product management, Agile development processes, technology platforms and operations, customer development and online marketing.

ITP 470x Information Technology Practicum (1-4, max 8, FaSpSm) Independent technology project related to specific topics under the direction of a faculty member. Not available for graduate credit in engineering. *Recommended preparation:* appropriate 300-level course work to topic of study.

ITP 475x Advanced Digital Forensics (4, Sp) Advanced forensic techniques. Live image analysis. Network level forensic investigation. Server forensic techniques. Deposition and trial. Not available for major credit in Engineering. *Prerequisite:* ITP 375x.

ITP 476 Technologies for Interactive Marketing (4) Designed to introduce students to technologies, concepts and strategies in the emerging online advertising ecosystem. Through lectures, discussions, and projects, students learn strategies and tactics to drive traffic to a website. They learn how to analyze and measure the efficacy of their plans. Lastly, they will work with a real client and with a real budget to craft and execute an on-line marketing plan.

ITP 480x Information Technology Internship (1-4, max 8) Practical experience in applying information technology skills in real-world settings. Supervised internship at companies and start-ups. Balancing academic rigor with corporate challenges and deadlines. Not available for graduate credit. Graded CR/NC. *Recommended preparation:* knowledge of chosen function area.

ITP 482 Engineering Database Applications (3) Planning and implementation of engineering information systems that interface with a large database. Emphasis is placed on web-based data entry and retrieval. *Prerequisite:* CSCI 101 or IOM 435 or ISE 382.

ITP 484x Multiplayer Game Programming (3) Techniques for developing networked multiplayer games. Topics include Internet protocols, network topology, data streams, object sharing, client prediction, latency, and back-end databases. *Prerequisite:* ITP 380.

ITP 485 Programming Game Engines (4, FaSp) Techniques for building the core components of a game engine; 2-D/3-D graphics, collision detection, artificial intelligence algorithms, shading, programming input devices. *Prerequisite:* CSCI 102L, ITP 380.

ITP 486 Securing and Auditing Enterprise Resource Planning Systems (3) Management and technical issues related to the security of ERP systems. Students will audit ERP systems and apply appropriate security controls. *Prerequisite:* ITP 320x.

ITP 487 Data Warehouses and Business Intelligence (3) Rigorous modeling process leading from data to decisions. Explores theory and practice of Data Warehouses. Deriving Business Intelligence for strategic enterprise management. *Prerequisite:* ITP 320x.

ITP 488x Managing Supply Chains with Advanced Planning and Optimization (3) Drivers and obstacles to the process of coordinating the flow of material/information along the logistics chain. Optimize the supply network, from raw materials to sales. Not available for major credit in engineering except toward undergraduate and graduate programs offered by the Epstein Department of Industrial and Systems Engineering. *Prerequisite:* ITP 320x.

ITP 491x Level Design and Development for Video Games (4) Theories and practices of defining, prototyping, testing, and refining a video game level, development of game level documents, and the tools for managing the development process. Not for major credit for computer science and electrical engineering students. *Prerequisite:* ITP 280.

ITP 496 The Startup Launchpad Lab (2) A real world, hands-on learning experience on what it's like to actually start a high-tech company. Students will work in teams to design, prototype and implement version 1.0 of a high tech web or mobile startup. *Prerequisite:* BAEP 451, BAEP 452, ITP 466 and ITP 476; *corequisite:* BAEP 496.

ITP 499x Special Topics (2-4, max 8) Recent developments in computers and data processing.

ITP 555 Functionality of Enterprise Resource Planning Systems (1) The functionality of Enterprise Resource Planning Systems (ERPs); the methods of implementation and the integration of information throughout an organization are discussed and analyzed. *Concurrent enrollment:* ACCT 555; *recommended preparation:* ACCT 547.

Manufacturing Engineering

Ethel Percy Andrus
Gerontology Center 240
(213) 740-4893
FAX: (213) 740-1120
Email: iseddept@usc.edu

Program Director: B. Khoshnevis, Ph.D.

Master of Science in Manufacturing Engineering

Manufacturing engineering at USC is a multidisciplinary program that confers the degree of Master of Science and is designed to produce graduates capable of responding to the needs of modern, up-to-date manufacturing. These graduates should be able to design, install and operate complex manufacturing systems

made up of people, materials, automated machines and information systems. The Departments of Computer Science, Electrical Engineering, Industrial and Systems Engineering, Materials Science, Mechanical Engineering, and Entrepreneurship participate in the Manufacturing Engineering Program.

Course work in the program will train students in traditional manufacturing engineering topics, such as materials selection and process design. Additional courses will include the more modern, system-level concepts of integrated product and process design, applications of modern information technology to design and manufacturing, hands-on laboratories using advanced

manufacturing equipment and commercial software, and entrepreneurship.

Curriculum

A total of 30 units is required beyond the B.S. degree. A minimum of 21 units must be at the 500 level or above. A maximum of 6 units of electives may be taken from non-engineering departments. At least three courses must be taken in the student's selected area of specialization.

REQUIRED COURSES		UNITS				
CSCI 585	Database Systems, or		ISE 511L	Mechatronic Systems Engineering	3	ISE 525 Design of Experiments, or
ISE 510	Advanced Computational Design and Manufacturing	3	ISE 517	Modern Enterprise Systems, or		AME 525 Engineering Analysis
			ISE 576	Industrial Ecology: Technology-Environment Interaction	3	Approved electives*
						18
						30

*A list of approved electives in specialization areas is available from the department. Departmental approval is required for courses not listed.

Multimedia and Creative Technologies

Minor in Interactive Multimedia

A minor in interactive multimedia is open to undergraduate students in all majors. This minor provides students with the skills and knowledge necessary to apply and develop interactive multimedia tools within a variety of industries. Although this program is geared towards the non-technical student, computer literacy is a key component to being successful in this program.

Students must apply to the program through the Viterbi School of Engineering, and approval of the student's adviser will be required on the application form. Students are required to complete a minimum of 19 units of course work consisting of both core requirements and elective courses.

Successful completion of the interactive multimedia minor requires a minimum of a 2.0 GPA in the following courses.

Note: The minor in interactive multimedia is scheduled for revision and applications for the program are not currently being accepted.

CORE COURSES	UNITS
CTIN 190 Introduction to Interactive Entertainment	4
EE 320X Digital Media Basics for Multimedia	3
ITP 101X Introduction to Information Technology, or	4
ITP 105X* Introduction to Computer Technologies and Applications	2
ITP 210X Multimedia Applications for Windows (corequisite to EE 320)	2
JOUR 413 Introduction to Online Journalism	4
Total core units:	13-15

Elective Courses: 6-8 units

Students will choose two elective courses from the following list:

Cinematic Arts

CTIN 483	Introduction to Game Development	4
CTIN 488	Game Design Workshop	4

Engineering

EE 450	Introduction to Computer Networks	3
ITP 301Lx	Interactive Web Development, or	4
CSCI 351*	Programming and Multimedia on the World Wide Web	3

*Prerequisites waived if students are competent in programming.

Journalism

JOUR 417	Online Journalism Management	2
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Fine Arts (Multimedia Design)

FADN 302	Design II	4
FAIN 310	Digital Photo Studio	4
FAIN 315	Internet Studio: Online Experimentation and Expression	4
FAIN 410	Advanced Digital Photo Studio	4
FASC 436	Art and Technology	4

Total units required for completion of minor: 19-23 units

Total units including all prerequisite courses: 26-36

Master of Science in Computer Science (Multimedia and Creative Technologies)

Students may earn a specialization in multimedia and creative technologies by completing the general requirements for the Master of Science in computer science and the following additional courses:

Every student must complete CSCI 576 Multimedia Systems Design (3). Students must also complete at least two courses selected from one of the two specialization tracks: Graphics and Vision or Networks and Databases.

GRAPHICS AND VISION TRACK

	UNITS
CSCI 520 Computer Animation and Simulation	3
CSCI 574 Computer Vision	3
CSCI 580 3-D Graphics and Rendering	3
CSCI 582 Geometric Modeling	3
CSCI 674 Advanced Topics in Computer Vision	3
EE 569 Introduction to Digital Image Processing	3

NETWORKS AND DATABASES TRACK

	UNITS
CSCI 551 Computer Communications	3
CSCI 558L Internetworking and Distributed Systems Laboratory	3
CSCI 585* Database Systems	3
CSCI 586 Database Systems Interoperability	3
CSCI 694ab Topics in Computer Networks and Distributed Systems	3-3
EE 450 Introduction to Computer Networks	3

Suggested Core and Elective Courses

Since this specialization is systems oriented, it is recommended (but not required) that students select CSCI 555 Advanced Operating Systems and EE 557 Computer Systems Architecture as two of their three core courses.

Additional electives may be taken from the two tracks or from the partial list of suggestions below.

CSCI 561*	Foundations of Artificial Intelligence	3
CSCI 573	Probabilistic Reasoning	3
CSCI 577ab*	Software Engineering	4-4
CSCI 583	Computational Geometry	3
CSCI 588	Specification and Design of User Interface Software	3
CSCI 590	Directed Research	1-12
EE 554	Real Time Computer Systems	3
ISE 571	Human Factor Issues in Integrated Media Systems	3
ISE 575	Topics in Engineering Approaches to Music Cognition	3, max 6

*Also satisfies a core course requirement in the general requirements for the M.S. degree in Computer Science.

Master of Science in Electrical Engineering (Multimedia and Creative Technologies)

Students may earn a specialization in multimedia and creative technologies by completing the general requirements for the Master of Science in Electrical Engineering and the following additional requirements:

- At most four units of electives can be taken outside of the Viterbi School of Engineering with adviser approval. Some examples are CTAN 452 Introduction to 3-D Computer Animation (2 units) and CTIN 483 Introduction to Game Development (4 units).
- Computer science courses that are cross-listed with EE can (but do not have to) count toward the 18 EE units. Up to nine units of other CSCI courses that either are or are not cross-listed can also be used. Multimedia and creative technologies draws heavily on concepts and techniques from computer science.
- Students must include the following three courses in their program

EE 483	Introduction to Digital Signal Processing	3
EE 519	Speech Recognition and Processing for Multimedia	3
EE 569	Introduction to Digital Image Processing	3
- A course can be waived if a student can demonstrate equivalent knowledge of the material and if the course instructor will certify it.
- Students must include six courses from the following list of courses in their programs for a total of 18 units.

Approved Courses for the Multimedia Specialization**COURSES IN ELECTRICAL ENGINEERING**

		UNITS
EE 450	Introduction to Computer Networks	3
EE 522	Immersive Audio Signal Processing	3
EE 555	Broadband Network Architectures	3
EE 577a	VLSI System Design	3
EE 586L	Advanced DSP Design Laboratory	4
EE 596	Wavelets	3
EE 619	Advanced Topics in Automatic Speech Recognition	3
EE 669	Multimedia Data Compression	3

COURSES IN COMPUTER SCIENCE

		UNITS
CSCI 455X	Introduction to Programming Systems Design	4
CSCI 480	Computer Graphics	3
CSCI 485	File and Database Management	3
CSCI 551	Computer Communications	3
CSCI 571	Web Technologies	3
CSCI 574	Computer Vision	3

CSCI 576	Multimedia Systems Design	3
CSCI 580	3-D Graphics and Rendering	3
CSCI 582	Geometric Modeling	3
CSCI 585	Database Systems	3

COURSES FROM THE SCHOOL OF**CINEMATIC ARTS**

		UNITS
CTAN 452	Introduction to 3-D Computer Animation	2, max 4
CTIN 483	Introduction to Game Development	4

COURSE IN INFORMATION TECHNOLOGY

		UNITS
ITP 411X	Multimedia and Video Production	3

- Students may replace courses in the above list with a combined maximum of multimedia-related EE 599 or CSCI 599 Special Topics courses in their programs. Every course requires prior approval from the faculty adviser, recorded each semester on the plan of study form.
- Students may include a maximum of 6 units of EE 590 Directed Research in their programs. Before registering for these units, the faculty adviser must approve

a written description of the intended multimedia research project signed by the faculty member who will supervise the student.

- Students entering this program are expected to have already completed, either at USC or at another institution, formal course work equivalent to USC course EE 364 Introduction to Probability and Statistics for Electrical Engineering. If an approved course has either EE 441 or EE 464 as a prerequisite, then the student must first take and pass the placement examination that is given each semester for either EE 441 or EE 464 before taking the approved course. Information about placement exams can be found at ee.usc.edu.
- Although not required, students should be proficient in C or C++ programming, at the level taught in CSCI 455X.
- Although not required, ITP 411X Multimedia and Video Production (3 units) will provide the student with hands-on experience in using multimedia application tools. This will help the student prepare a portfolio, which is expected by the industry from students who major in a multimedia program.

Product Development Engineering

Olin Hall of Engineering, 430

(213) 740-5353

FAX: (213) 740-8071

Email: mispde@usc.edu

Program Director: Stephen C-Y Lu, Ph.D.

Master of Science in Product Development Engineering

The Master of Science in product development engineering (MS PDE) is an interdisciplinary graduate degree program at USC jointly offered by the Aerospace and Mechanical Engineering and the Daniel J. Epstein Industrial and Systems Engineering (ISE) departments. The Aerospace and Mechanical Engineering department manages this joint degree program. Students can enter this program in either the fall or spring semesters, and it is available to full-time and part-time students.

Admission

The program has the following admission requirements:

- A bachelor's degree in an area of engineering or science;
- An undergraduate cumulative GPA of 3.0 or above; and
- Satisfactory general GRE scores of at least 400 verbal, 650 quantitative and 550 analytical.

The MS PDE program requires a minimum of 27 units to complete. Although it is mainly a course work-based program, students can choose to complete the program with or without a thesis requirement. For the thesis option, 4 of the 27 units are to be thesis. At least 16 units, not including thesis, must be at the 500 level or higher, and at least 18 units must be from the AME and ISE departments. For the non-thesis option, 18 of the 27 units must be at the 500 level or higher from the AME and ISE departments, and/or closely related

departments. As well, students can choose to take up to 6 units of directed research (e.g., AME 590 or ISE 590). Students must maintain a minimal cumulative GPA of 3.0 in USC course work to graduate.

The program's prerequisite is a minimum of one 400 level course in either engineering design or engineering economy. Admitted students who do not meet this prerequisite will be assigned appropriate USC course(s) to complete the deficiencies. Deficiency courses, if taken at the 400 level, may be counted toward 27 units as general electives with adviser approval.

Depending on the academic background and career interests of students, the program offers two areas of specialization, product development technology and product development systems. The product development technology specialization will prepare students for a career as future product development engineers, while the product development systems specialization will prepare students as future product development managers. Students entering this program must declare their choice of an area of specialization and follow the requirements of each area of specialization to graduate.

Curriculum

The required 27 units are grouped into four categories of courses for each area of specialization as follows:

REQUIRED COURSES (6 UNITS)

		UNITS
AME 503	Advanced Mechanical Design	3
ISE 545	Technology Development and Implementation	3

PRODUCT DEVELOPMENT SYSTEMS**REQUIRED COURSES (6 UNITS)**

		UNITS
ISE 515	Engineering Project Management	3
ISE 544	Management of Engineering Teams	3

PRODUCT DEVELOPMENT SYSTEMS**TECHNICAL ELECTIVES (6 UNITS)**

		UNITS
ISE 415	Industrial Automation	3
ISE 460	Engineering Economy	3
ISE 470	Human/Computer Interface Design	3
ISE 511L	Mechatronics Systems Engineering	3
ISE 517	Modern Enterprise Systems	3
ISE 525	Design of Experiments	3
ISE 527	Quality Management for Engineers	3
ISE 528	Advanced Statistical Aspects of Engineering Reliability	3
ISE 555	Invention and Technology Development	3
ISE 561	Economic Analysis of Engineering Projects	3
ISE 567	Collaborative Engineering Principles and Practice	3
ISE 576	Industrial Ecology: Technology-Environment Interaction	3
ISE 580	Advanced Concepts in Computer Simulation	3
ISE 585	Strategic Management of Technology	3
SAE 541	Systems Engineering Theory and Practice	3

PRODUCT DEVELOPMENT TECHNOLOGY**REQUIRED COURSES (6 UNITS)**

		UNITS
AME 505	Engineering Information Modeling	3
AME 525	Engineering Analysis, or	
AME 526	Engineering Analytical Methods	3

PRODUCT DEVELOPMENT TECHNOLOGY**TECHNICAL ELECTIVES (6 UNITS)**

		UNITS
AME 408	Computer-Aided Design of Mechanical Systems	3
AME 410	Engineering Design Theory and Methodology	3

AME 481	Aircraft Design	3
AME 501	Spacecraft System Design	3
AME 504	Metallurgical Design	3
AME 506	Design of Low Cost Space Missions	3
AME 527	Elements of Vehicle and Energy Systems Design	3
AME 528	Elements of Composite Structure Design	3
AME 544	Computer Control of Mechanical Systems	3
AME 588	Materials Selection	3
CE 550	Computer-Aided Engineering	3

CE 551	Computer-Aided Engineering Project	3
ISE 567	Collaborative Engineering Principles and Practice	3
ISE 576	Industrial Ecology: Technology-Environment Interaction	3
SAE 549	Systems Architecting	3

GENERAL ELECTIVES (9 UNITS)

Adviser-approved electives (Must be upper-division 400- or 500-level courses; up to 4 units can be transferred from other institutions)

Total units required for degree

27

Sustainable Infrastructure Systems

The Sustainable Infrastructure Systems program prepares students for immediate and effective participation in the modern infrastructure workforce through a common core that includes smart-system design for sustainable infrastructures, the societal and regulatory context of infrastructure engineering decisions, and construction management. Five plans of study for the Master of Science degree allow for specialization based on background and interest.

Master of Science in Civil Engineering (Transportation Systems)

REQUIRED COURSES

		UNITS
CE 471	Principles of Transportation Engineering	3
CE 501	Functions of the Constructor	3
CE 515	Sustainable Infrastructure Systems	3
CE 579	Introduction to Transportation Planning Law	3
PPD 633	Urban Transportation Planning and Management	4

ELECTIVE COURSES (FOUR COURSES, OTHER ELECTIVES UPON APPROVAL*)

		UNITS
CE 583	Design of Transportation Facilities	3
CE 585	Traffic Engineering and Control	3
CE 588	Railroad Engineering	3
CE 589	Port Engineering: Planning and Operations	3
PPD 634	Institutional and Policy Issues in Transportation	4
PPD 692	Transportation and the Environment	4

*Note: Students electing the Master of Science in Civil Engineering (Transportation Systems) degree option are expected to have a background in statistics and uncertainty equivalent to ISE 225 or CE 408, and engineering economy equivalent to ISE 460. Admitted students who do not meet these prerequisites can satisfy the requirements by taking appropriate, adviser-approved electives.

Master of Science in Civil Engineering (Water and Waste Management)

REQUIRED COURSES

		UNITS
CE 451	Water Resources Engineering	3
CE 453	Water Quality Control	3
CE 476	Design of Pressurized Hydraulic Systems	3
CE 501	Functions of the Constructor	3
CE 515	Sustainable Infrastructure Systems	3

ELECTIVE COURSES (FOUR COURSES, OTHER ELECTIVES WITH APPROVAL*)

		UNITS
CE 504	Solid Waste Management	3
CE 510	Groundwater Management	3
CE 511	Flood Control Hydrology	3
CE 516	Geohydrology	3
CE 520a	Ocean and Coastal Engineering	3

*Note: Students electing the Master of Science in Civil Engineering (Water and Waste Management) degree option are expected to have a background in fluid mechanics equivalent to CE 309 or ENE 410. Admitted students who do not meet this prerequisite will be assigned a course to complete the deficiency.

Master of Science in Electrical Engineering (Electric Power)

REQUIRED COURSES

		UNITS
CE 515	Sustainable Infrastructure Systems	3
CE 501	Functions of the Constructor	3
EE 443	Introduction to Power Systems	3
EE 444	Power Systems Technology	3
EE 521	Power Systems Analysis and Design	3

ELECTIVE COURSES (FOUR COURSES, OTHER ELECTIVES WITH APPROVAL*)

		UNITS
EE 513	Solid State Energy Devices	3
EE 524	Transients in Power Systems	3
EE 525	Power System Protection	3
EE 526	Renewable Energy in Power Systems	3
EE 527	Net-Centric Power-System Control	3

Master of Science in Electrical Engineering (Telecommunications)

REQUIRED COURSES

		UNITS
CE 501	Functions of the Constructor	3
CE 515	Sustainable Infrastructure Systems	3
EE 450	Introduction to Computer Networks	3
EE 475	Wireless Communication Technology	3
EE 485	Telecommunications Technology	3

ELECTIVE COURSES (FOUR COURSES, OTHER ELECTIVES WITH APPROVAL*)

		UNITS
EE 544	Radio Frequency Systems and Hardware	3
EE 550	Design and Analysis of Computer Communication Networks	3
EE 555	Broadband Network Architectures	3
EE 558	Optical Fiber Communication Systems	3
EE 567	Communication Systems	3

*Note: Students electing the Master of Science in Electrical Engineering (Telecommunications) degree option are expected to have a background in probability and statistics equivalent to EE 464 or EE 465, and linear algebra equivalent to EE 441. Admitted students who do not meet prerequisites by placement examination will be assigned courses to complete the deficiencies.

Master of Science in Mechanical Engineering (Energy Conversion)

REQUIRED COURSES

		UNITS
AME 430	Thermal Systems Design	3
AME 577	Survey of Energy and Power for a Sustainable Future	3
AME 578	Modern Alternative Energy Conversion Devices	3
CE 501	Functions of the Constructor	3
CE 515	Sustainable Infrastructure Systems	3

**ELECTIVE COURSES (FOUR COURSES,
OTHER ELECTIVES WITH APPROVAL*)**

		UNITS
AME 513	Principles of Combustion	3
AME 514	Applications of Combustion and Reacting Flows	3
AME 579	Combustion Chemistry and Physics	3

AME 581	Introduction to Nuclear Engineering	3
ENE 505	Energy and the Environment	3
<i>*Students are encouraged to consider electives in other infrastructure programs.</i>		

Students with M.S. degrees in engineering or science disciplines can be accepted in these programs. Students must satisfy all other departmental degree requirements.

Systems Architecting and Engineering

Ethel Percy Andrus
Gerontology Center 240
(213) 740-4893

FAX: (213) 740-1120

Email: iseddept@usc.edu

Program Director: Azad M. Madni, Ph.D.

Email: azad.madni@usc.edu

Associate Director: George Friedman, Ph.D.

Email: georgejfriedman@yahoo.com

Associate Director: James Hines

Email: jhines@usc.edu

Associate Director: Scott Jackson

Email: jackessone@cox.net

Honor Societies

Omega Alpha Association

Omega Alpha Association is the systems engineering honor society. The adviser is Professor Stan Settles, (213) 740-0263.

Degree Requirements

Master of Science in Systems Architecting and Engineering

This program is recommended to graduate engineers and engineering managers responsible for the conception and implementation of complex systems. Emphasis is on the creative processes and methods by which complex systems are conceived, planned, designed, built, tested and certified. The architecture experience can be applied to defense, space, aircraft, communications, navigation, sensors, computer software, computer hardware, and other aerospace and commercial systems and activities.

A minimum grade point average of 3.0 must be earned on all course work applied toward the master's degree in systems architecting and engineering. This average must also be achieved on all 400-level and above course work attempted at USC beyond the bachelor's degree. Transfer units count as credit (CR) toward the master's degree and are not computed in the grade point average.

In addition to the general requirements of the Viterbi School of Engineering, the Master of Science in systems architecting and engineering is also subject to the following requirements:

- a total of at least 30 units is required, consisting of at least three units in the technical management area, three units in the general technical area, and 12 units in the technical specialization area;
- every plan of study requires prior written approval by the director of the systems architecting and engineering program recorded on the study plan in the student's file;

- no more than nine units at the 400 level may be counted toward the degree — the remaining units must be taken at the 500 or 600 level;
- at least 24 of the 30 units must be taken in the Viterbi School of Engineering;
- units to be transferred (maximum of four with adviser approval) must have been taken prior to taking classes at USC; interruption of residency is not allowed;
- no more than 6 units of Special Topics courses (499 or 599) may be counted for this degree;
- thesis and directed research registrations may be allowed to individual students only by special permission of the supervising faculty member and the program director;
- a bachelor's degree in an engineering field and a minimum of three years systems experience are recommended prior to taking Systems Architecting and Design Experience courses. This program is not recommended for recent bachelor's degree graduates.

REQUIRED COURSES		UNITS
ISE 460	Engineering Economy, or	
ISE 561	Economic Analysis of Engineering Projects, or	
ISE 563	Financial Engineering, or	
SAE 560	Economic Considerations for Systems Engineering	3
SAE 541	Systems Engineering Theory and Practice	3
SAE 549	Systems Architecting	3

One design-related course approved by the director 3

ELECTIVES		UNITS
Adviser-approved electives in technical management area		3
Adviser-approved electives in general technical area		3
Adviser-approved electives in technical specialization area		12

Technical Management Area: Take one course (3 units) from the following:

CE 556ab	Project Cost Estimating, Control, Planning and Scheduling	3-3
IOM 525*	Quality Improvement Methods	3
IOM 527*	Managerial Decision Analysis	3
IOM 537*	Global Businesses and Markets: Strategies Enabled by Technology	3
IOM 580*	Project Management	3

ISE 515	Engineering Product Management	3
ISE 517	Modern Enterprise Systems	3
ISE 544	Management of Engineering Teams	3
ISE 562	Value and Decision Theory	3
ISE 585	Strategic Management of Technology	3
MOR 561*	Strategies in High-Tech Businesses	3
SAE 550	Systems Architecting and the Political Process	3

**USC Marshall School of Business course.*

General Technical Area: Take one course (3 units) from the following:

CSCI 510	Software Management and Economics	3
CSCI 577ab	Software Engineering	4-4
IOM 535*	Database Management	3
ISE 580	Advanced Concepts in Computer Simulation	3
SAE 542	Advanced Topics in Systems Engineering	3
SAE 543	Case Studies in Systems Engineering and Management	3
SAE 550	Systems Architecting and the Political Process	3
SAE 551	Lean Operations	3

**USC Marshall School of Business course.*

Technical Specialization Area: Twelve units are required, usually in the student's present or intended technical specialty. Courses are intended to complement the student's prior education and experience toward becoming a well-rounded systems architect-engineer or architect-manager. With a few exceptions, the courses should come from the recommended list, and usually all from a single specialization.

The student may choose from a large variety of technical specializations spanning all departments in the Viterbi School of Engineering. Flexibility is emphasized in this choice; the program director is expected to work closely with the student in choosing the best set of courses to meet the student's need.

Several sample specializations are listed below but are not intended to be complete.

Recommended Courses

Aerospace and Mechanical Systems: AME 503, AME 504, AME 521, AME 532a, AME 544, AME 548, AME 560, AME 588

Artificial Intelligence/Neural Networks: CSCI 460, CSCI 545, CSCI 561, CSCI 564, CSCI 566, CSCI 567, CSCI 574; EE 547

Automation and Control Systems: EE 543a, EE 547, EE 585, EE 587, EE 588, EE 593

Communication and Signal Processing Systems: EE 551, EE 562a, EE 563, EE 564, EE 567, EE 580, EE 582, EE 583

Computer and Information Systems: CSCI 485, CSCI 551, CSCI 585, EE 552, EE 554, EE 561, EE 562a, EE 574, EE 658

Construction: CE 501, CE 519, CE 525ab, CE 533, CE 536, CE 556ab, CE 583

Engineering Management Systems: ISE 515, ISE 530, ISE 535, ISE 544, ISE 562, ISE 580, ISE 585; SAE 541, SAE 550

Integrated Media Systems: EE 450, EE 469, EE 522, EE 555, EE 569, EE 596; CSCI 480, CSCI 551, CSCI 574, CSCI 576, CSCI 585, CSCI 588

Manufacturing Systems: AME 588; EE 561ab; ISE 511, ISE 514, ISE 516, ISE 517, ISE 544, ISE 570

Network-centric: CSCI 402, CSCI 530, CSCI 551, CSCI 555, CSCI 558L, CSCI 577ab, EE 550, SAE 574

Software Process Architecture: CSCI 510, CSCI 577b, CSCI 665; EE 554, EE 557; ISE 544, ISE 562, ISE 564

Systems: EE 538; ISE 515, ISE 520, ISE 525, ISE 527, ISE 528, ISE 532, ISE 535, ISE 536, ISE 538, ISE 544, ISE 562, ISE 580, ISE 585; SAE 541, SAE 542

Graduate Certificate in Systems Architecting and Engineering

The graduate certificate in systems architecting and engineering is designed for practicing engineers engaged in the creation and design of complex innovative systems, in aerospace and commercial fields. Entering students are expected to have a bachelor's degree in engineering or a related field from an accredited institution. Three years of industry experience are recommended. Students are required to earn a cumulative B average or higher in courses taken for the certificate. The courses taken for the certificate may be applied later to the Master of Science in Systems Architecting and Engineering.

REQUIRED COURSES — CHOOSE FOUR		UNITS
ISE 460	Engineering Economy, or	
ISE 561	Economic Analysis of	
	Engineering Projects, or	
SAE 560	Economic Considerations for	3
	Systems Engineering	
ISE 515	Engineering Project	
	Management	3
ISE 544	Management of Engineering	
	Teams	3
SAE 541	Systems Engineering Theory	
	and Practice	3

SAE 542	Advanced Topics in Systems	
	Engineering	3
SAE 549	Systems Architecting	3

In addition, one 3- or 4-unit elective course shall be taken from the list of those approved for the Master of Science in Systems Architecting and Engineering.

All programs of study will be approved by the director of the Systems Architecting and Engineering program.

Graduate Certificate in Network Centric Systems

This 15-unit graduate certificate is jointly sponsored by the Epstein Industrial and Systems Engineering, Hsieh Electrical Engineering and Computer Science departments, and administered by the Epstein ISE Department. This certificate is designed for practicing engineers engaged in the creation and design of complex innovative network centric systems in aerospace and commercial fields. Entering students are expected to have a bachelor's degree in engineering or a related field from an accredited institution. Three years of industry experience are recommended. Students are required to earn a cumulative B average or higher in courses taken for the certificate. The courses taken for the certificate may be applied later to the Master of Science in Computer Science, Electrical Engineering or Systems Architecting Engineering with departmental approval.

REQUIRED COURSES		UNITS
SAE 574	Net-centric Systems	
	Architecting and Engineering	3
Choose 4 courses from one area of emphasis:		12
<i>Computer Science Emphasis</i>		
Required CSCI course		
CSCI 551	Computer Communications	3
CSCI Electives (choose three courses, 9 units)		
CSCI 530	Security Systems	4
CSCI 531	Applied Cryptography	3
CSCI 546	Intelligent Embedded Systems	3
CSCI 555	Advanced Operating Systems	3
CSCI 556	Introduction to Cryptography	3
CSCI 558L	Networking and	
	Distributed Systems Laboratory	3
CSCI 561	Foundations of Artificial	
	Intelligence	3
CSCI 573	Probabilistic Reasoning	3
CSCI 576	Multimedia Systems Design	3
CSCI 585	Database Systems	3

Electrical Engineering Emphasis

Required EE course		
EE 535	Mobile Communications	3
EE Electives (choose three courses, 9 units)		
EE 541	Radio Frequency Filter Design	3
EE 544	Radio Frequency Systems	
	and Hardware	3
EE 550	Design and Analysis of	
	Computer Communication	
	Networks	3

EE 555	Broadband Network	
	Architectures	3
EE 562ab	Random Processes in	
	Engineering	3-3
EE 564	Communication Theory	3
EE 567	Communication Systems	3
EE 579	Wireless and Mobile Networks	
	Design and Laboratory	3
EE 666	Data Communication	3
		15

Courses of Instruction

SYSTEMS ARCHITECTING AND ENGINEERING (SAE)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

SAE 496 Systems Engineering Through Motorsports (3, FaSp) Applied systems architecting, engineering and management to motorsports from design to validation and verification; venues include drag racing, grand prix Formula SAE racing, DARPA Challenges.

SAE 499 Special Topics (2-4, max 8) Course content to be selected each semester from recent developments in Systems Architecting and Engineering and related fields.

SAE 541 Systems Engineering Theory and Practice (3, FaSpSm) Integration of engineering problem solving methodologies based on systems concepts. Application to complex, large scale technical systems and problems faced by engineering managers. Case studies. (Duplicates credit in former ISE 541).

SAE 542 Advanced Topics in Systems Engineering (3, FaSp) Advanced topics in integration software management and systems engineering, probabilistic foundations of decision-based theory, quantitative risk management, decision-based design, and safety aspects of systems engineering. (Duplicates credit in former ISE 542). *Prerequisite:* SAE 541.

SAE 543 Case Studies in Systems Engineering and Management (3, FaSp) Real-world case studies in DoD, NASA, and commercial arenas, employing new methodologies to cover the fundamental positive and negative development learning principles of systems engineering. *Prerequisite:* SAE 541, SAE 549.

SAE 547 Model-Based Systems Architecting and Engineering (3) Approaches for modeling systems using software such as SysML; modeling system, requirements, structure, behavior, and parametrics; mapping to hardware description language and behavioral code generation. *Recommended preparation:* Modeling and simulation courses.

SAE 548 Systems/System-of-Systems Integration and Communication (3, FaSp) Essentials of systems and system-of-systems integration from the perspectives of business, programs, and technology. Process, legacy, and systems-of-systems integration. Verification and validation methods. Case studies. *Recommended preparation:* bachelor's degree in engineering or physical sciences.

SAE 549 Systems Architecting (3, FaSp) Introduction to systems architecture in aerospace, electrical, computer, and manufacturing systems emphasizing the conceptual and acceptance phases and using heuristics. *Prerequisite:* B.S. degree in a related field of engineering.

SAE 550 Systems Architecting and the Political Process (3) Analysis of risks inherent in managing high-tech/high-cost government-funded engineering programs; tools and techniques for coping with the impacts of politically-driven budgets on the engineering design process. (Duplicates credit in former ISE 550). *Recommended preparation:* two years of work experience.

SAE 551 Lean Operations (3, Sp) Study of lean principles and practices as applied to automotive, aerospace and other industries.

SAE 560 Economic Considerations for Systems Engineering (3) Impact of economic factors for systems architects and engineers, tools for understanding these factors, fundamental quantitative analysis of cash flow, life-cost estimating for systems and software engineering.

SAE 574 Net-Centric Systems Architecting and Engineering (3, FaSp) In-depth examination of the technical design approaches, tools, and processes to enable the benefits of net-centric operations in a networked systems-of-systems.

SAE 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

SAE 594abz Master's Thesis (2-2-0, FaSpSm) Credit on acceptance of thesis. Graded IP/CR/NC.

SAE 599 Special Topics (2-4, max 9, FaSpSm) Course content will be selected each semester to reflect current trends and developments in the field of systems architecting and engineering.



With undergraduate and graduate programs encompassing everything from traditional media to emerging fields, the USC Roski School of Fine Arts fosters interdisciplinary creativity and experimentation. In 2013 U.S. News & World Report named Roski the eighth best graduate program for multimedia and visual communication in the United States.

Founded in 1883, the USC Roski School of Fine Arts is a leader in the constellation of influential Los Angeles art schools. Our programs encourage interdisciplinary approaches to studio art, design, curatorial practice and critical studies. USC Roski prepares artists, designers and curators to impact visual culture with aesthetic acuity, technical ability and critical insight.

Students pursuing a B.A. have ample opportunity to explore the academic offerings of a world-class research institution, while BFA students immerse themselves fully in studio production. A distinguished and dedicated faculty teaches comprehensive courses in painting, drawing, printmaking, sculpture, ceramics, photography, design, digital media and critical studies. Students work across media to push perceived boundaries and discover their individual voices within increasingly global contexts.

At the graduate level, the MFA program is recognized nationally for its breadth and intensity, and a faculty of renowned practicing artists. Spacious private studios, one-on-one critiques with influential guest lecturers, and the expanded field of production offered by the Roski School's location in Los Angeles attract a highly selective student cohort. The M.A. program, Art and Curatorial Practices in the Public Sphere, is a platform for scholarship in contemporary art that addresses social questions of public space. In addition to a master's thesis, each class collectively engages in a curatorial practicum, culminating in an exhibition project that explores city-space.

Southern California is an unparalleled creative capital. Leading museums, galleries, advertising agencies, design firms, artist studios, and the music and film industries offer emerging artists and designers a wealth of internship and employment opportunities throughout their course of study.

**Watt Hall of Architecture
and Fine Arts 104**
(213) 740-2787
FAX: (213) 740-8938
Email: roski@usc.edu
roski.usc.edu

Administration

Erica Muhl, DMA, *Interim Dean*

Faculty

Ruth Weisberg Professor in Drawing: Ruth Weisberg, M.A.*

Professors: Jud Fine, MFA; Robbert Flick, MFA*; Margaret Lazzari, MFA*; Ron Rizk, MFA; Rochelle Steiner, Ph.D.; Ruth Weisberg, M.A.*

Associate Professors: Bob Alderette, MFA; Sharon Lockhart, MFA; Charlie White, MFA

Assistant Professor: Frances Stark, MFA

Assistant Professor of Fine Arts Practice: Shannon Ebner, MFA

Assistant Professor of the Practice of Art Criticism: Rhea Anastas, Ph.D.

Visiting Professor: Connie Butler, B.A.

Full-time Lecturers: Caroline Clerc, MFA; Jennifer Greiz-West, MFA; Sherin Guirguis, MFA; Karen Koblitiz, MFA; Lisa Lapinski, MFA; Haven Lin-Kirk, MFA; Ann Page, BFA; Julia Paull, MFA

Adjunct Faculty: China Adams, MFA; Tom Allen, MFA; Tanya Batura, MFA; Douglas Blechner, MFA; Maura Brewer, MFA; Kristin Calabrese, MFA; Jeffrey Cain, MFA; Steve Child, MFA; Molly Corey, M.A.; Alexis Disselkeon, MFA; Xavier Fumat, MFA; Phyllis Green,

MFA; Karin Higa, M.A.; Peter Holzhauer, MFA; Patrick Jackson, MFA; Roman Jaster, MFA; Vishal Jugdeo, MFA; Helen Kim, MFA; Andrew Kutchera, MFA; Christopher Lahti, M.A., MFA; Karen Liebowitz, MFA; Karen Moss Familian, Ph.D.; Thomas Muller, MFA; Brian Olson, B.A.; Richard Parker, MFA; Jennifer Phelps, MFA; Joseph Potts, MFA; Jonathan Pylypchuk, MFA; Jean Robison, MFA; Rachel Roske, MFA; David Schafer, MFA; Thomas Schorer, MFA; Julie Schustack, MFA; Kevin Stadler, BFA; Paul Sietsema, MFA; A.L. Steiner, B.A.; Jamie Sweetman, MFA; Caroline Thomas, MFA; Osvaldo Trujillo, MFA; Noura Wedell, Ph.D.; Ewa Wojciak, MFA; Alexis Zoto, MFA

Emeritus Professor: Jay Willis, M.A.

**Recipient of university-wide or school teaching award.*

General Information

Degrees Offered

At the undergraduate level, the school offers the Bachelor of Fine Arts. The Bachelor of Arts in Art is offered in conjunction with the Dornsife College of Letters, Arts and Sciences. The Roski School of Fine Arts also offers seven minor programs in studio arts and participates in a 3-D animation minor in conjunction with the Viterbi School of Engineering's Information Technology Program, a communication design minor in conjunction with the Marshall School of Business and the Annenberg School for Communication and Journalism, and a 2-D art for games minor and 3-D art for games minor with the Viterbi School of Engineering and the School of Cinematic Arts.

Degrees offered at the graduate level are: Master of Fine Arts and Master of Arts, Art and Curatorial Practices in the Public Sphere. A dual degree is also available: Master of Arts, Art and Curatorial Practices in the Public Sphere/Master of Planning.

Minimum Grade Point Average Requirements

A minimum grade of C (2.0) or higher is required in all studio and art history courses for all undergraduate majors and minors in the Roski School of Fine Arts. A grade of C- or lower will not satisfy a major or minor requirement. A minimum grade point average of 3.0 must be maintained by all candidates for the Master of Fine Arts and Master of Arts.

Undergraduate Admission

Admission to the Roski School of Fine Arts at the undergraduate level is granted through the USC Office of

Admission. Freshman applicants applying by December 1 for the fall semester will receive priority consideration for admission to the university. The deadline for transfer applicants for the fall semester is February 1.

Undergraduate applicants must upload a portfolio of images and an artist statement at the school's Website. Specific requirements and additional information are available at roski.usc.edu/undergrad or email finearts@usc.edu.

Students who have not been admitted to the Roski School of Fine Arts may complete a maximum of 20 units of fine arts course work at USC. No further course work may be taken until admitted. Students who are interested in becoming fine arts majors or minors should meet with the Roski School's advisers as soon as possible, preferably during their first semester taking art classes. Advisers can be contacted through the school's Advisement Office, Watt Hall 116, (213) 821-1290, for assistance.

Graduate Admission

Applications for admission to the graduate programs are evaluated by the USC Office of Graduate Admission before being forwarded to the school. Students must be admitted by both the USC Graduate School and the Roski School of Fine Arts. The Graduate School's general admission requirements include official transcripts of all previous college and university work, and three letters of recommendation from instructors or persons able to comment on the applicant's creative work and/or scholarly potential.

Applicants to the MFA degree must upload a portfolio of images and an artist statement at the school's Website. Specific requirements and additional information are available at roski.usc.edu/mfa.

Applicants to the M.A. degree are encouraged to review program requirements at roski.usc.edu/ma.

Advisement

Academic advisement is provided to fine arts majors, minors and graduate students through the Advisement Office in Watt Hall 116, (213) 821-1290. All students who are interested in taking art courses are welcomed and encouraged to make an appointment for advisement as well. The staff advisers provide information regarding academic life at the university, program requirements, policies and procedures to assist students with their degree completion. Majors are required to meet with advisers before registering each semester. Appointments may be scheduled at most times during the academic year.

International Study Options

Fine arts majors may take advantage of art courses offered through study abroad programs in Canberra, Australia; Cape Town, South Africa; and Florence or Cortona, Italy. These options are described on page xx.

Please contact the USC Overseas Studies Office in CAS 104, (213) 740-3636, or usc.edu/schools/college/overseas for complete information, program requirements and applications.

Undergraduate Degrees

Bachelor of Fine Arts

The BFA is a four-year studio intensive program in preparation for a career in the fine arts, design and/or related fields or pursuit of a master of fine arts degree. With few required courses or electives and a wide variety of

media from which to choose, the BFA provides ample opportunity to explore and develop a strong personal vision in art.

Introductory courses focus on technique and conceptual context while building a solid grounding in art history and critical theory. Advanced students work on

self-generated independent projects under the guidance and mentoring of individual faculty members. Emphasis in the last year is on the production of a professional quality portfolio of work.

Curriculum Requirements

The BFA requires a total of 128 units, including 96 units of fine art requirements.

In addition to the fine arts required courses, BFA students are encouraged to explore in greater depth an area of art in which they have an interest. Students should select electives based on their personal and professional goals and in consultation with academic advisers. Electives are typically clustered in a particular field, but may be spread across different areas.

REQUIRED COURSES		UNITS
FACS 150	Visual Culture and Literacy I	4
FACS 250	Visual Culture and Literacy II	4
FACS 350	Art Theory and Criticism	4
FACS 450X	Senior Seminar	4
FADN 102	Design Fundamentals	4
FADW 101	Introduction to Drawing: Studio Projects, Methods, Materials	4
FASC 106	Sculpture I	4
One course from the following:		
AHIS 363	Race, Gender and Sexuality in Contemporary Art	4
AHIS 370	Modern Art III: 1940 to the Present	4
PAS 371	Art in the Public Realm: Contemporary Issues	4

Fine Arts electives:

Select 24 additional units from any 100–299 studio courses, no “x” classes

Select 40 additional units from any 300–499 studio courses

Total units: 96

General Education Requirements

The university’s general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. This program requires six courses in different categories, plus writing and diversity requirements, which together comprise the USC Core. See pages xx and xx for more information.

Bachelor of Arts, Art

The Bachelor of Arts program offers a more flexible and broad academic education than the bachelor of fine arts (BFA) degree while still providing a meaningful experience in the studio area that can be an asset in preparing for many art-related careers. The degree provides the student with the opportunity to double major or to combine an art major with a minor in various fields. Some possibilities for minors include communication, multimedia, education, business, film, animation and many other options.

Curriculum Requirements

The Bachelor of Arts (B.A.) requires a total of 128 units including 64 units of fine arts requirements.

In addition to the fine arts required courses, B.A. students should select electives based on their personal and professional goals and in consultation with academic advisers. Electives are typically clustered in a particular field, but may be spread across different areas.

REQUIRED COURSES		UNITS
FACS 150	Visual Culture and Literacy I	4
FACS 250	Visual Culture and Literacy II	4
FACS 350	Art Theory and Criticism	4
FADN 102	Design Fundamentals	4

FADW 101	Introduction to Drawing: Studio Projects, Methods, Materials	4
FASC 106	Sculpture I	4
One course from the following:		
AHIS 363	Race, Gender and Sexuality in Contemporary Art	4
AHIS 370	Modern Art III: 1940 to the Present	4
PAS 371	Art in the Public Realm: Contemporary Issues	4

Fine Arts electives:

Select 12 additional units from any 100–299 studio courses, no “x” classes

Select 24 additional units from the following:
300–499 studio. At least four units must be from one of the following classes: FACE 412, FADN 402, FADW 401, FAIN 410, FAIN 420, FAPH 409, FAPR 411, FAPT 405, FASC 406

Total units: 64

General Education Requirements

The university’s general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. This program requires six courses in different categories, plus writing, foreign language and diversity requirements, which together comprise the USC Core. See pages xx and xx for more information.

Minor Programs

Minors in Fine Arts

The Roski School of Fine Arts offers minors in fine arts as supplements to major fields of specialization in other departments and schools for students whose academic programs do not permit the opportunity to pursue one of the school’s regular degree options. There are seven intensive studio minors — in painting, drawing, photography, ceramics, sculpture, two-dimensional studies and digital media-based imaging — as well as interdisciplinary minors in communication design, 2-D art for games and 3-D art for games. There is a separate application for fine arts minors available at roski.usc.edu/minors.

Candidates for the minors in the Roski School of Fine Arts will be counseled by an academic adviser in the school.

Minor in Ceramics

Students enrolled in this minor will be introduced to the rich traditions of ceramic practice — from wheel throwing to 3-D modeling — while encouraging the use of materials and methods as vehicles for individual expression in contemporary art. They will be exposed to lectures and readings in the history of clay and critical

writings on the subject. A variety of classes is offered including beginning and advanced ceramics, wheel throwing, clay and glaze formulation, art and technology, modeling and mold making, sculpture, visual literacy and theory and criticism. As students advance in the level of their studies, they can choose to follow a traditional approach to clay and/or pursue exploration and experimentation with the medium including freedom to create mixed-media pieces or to bring technology in to their work. The goal is to create a strong foundation in clay significant to the career path of their choosing. The total number of units is required for this minor is 24.

REQUIRED LOWER DIVISION COURSES (8 UNITS)		UNITS
FACE 112	Ceramics	4
FACS 150	Visual Culture and Literacy I	4

Four lower division units chosen from the following:

FACE 212	Wheel Throwing	2
FACE 213	Clay and Glazes	2
FACE 214	3-D/Actual and Virtual	4
FASC 106	Sculpture I	4
FASC 136	Modeling and Mold Making	2

Three upper division courses (12 units) chosen from the following:

FACE 312	Advanced Ceramics	4
FACE 412	Topics in Advanced Ceramics	4, max 12
FACS 350	Art Theory and Criticism	4
FASC 436	Art and Technology	4

Minor in Communication Design

The core of this minor is communication design. In addition to courses in design, visual literacy and digital imaging, this minor includes optional courses in business, communication, journalism and marketing, allowing students to translate their design foundation in ways that are directly relevant to their career paths. The total number of units required for the minor is 24.

REQUIRED COURSES (24 UNITS)		UNITS
FADN 102	Design Fundamentals	4

One lower division course (4 units) chosen from the following:

FACS 150	Visual Culture and Literacy I	4
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REQUIRED COURSES (8 UNITS)		UNITS
FASC 106	Sculpture I	4
FASC 206	Sculpture II	4

Four lower-division units chosen from the following:

FACE 112	Ceramics	4
FADW 101	Introduction to Drawing: Studio Projects, Methods, and Materials	4
FASC 136	Modeling and Mold Making	2
FASC 236	Metal	2
FASC 246	Construction Techniques	2

Three upper-division courses (12 units) chosen from the following:

FASC 306	Advanced Sculpture	4
FASC 366	Art and Site	4
FASC 406	Topics in Advanced Sculpture	4
FASC 436	Art and Technology	4
PAS 371	Art in the Public Realm: Contemporary Issues	4

Minor in Two-Dimensional Studies

This minor is designed for students who wish to augment their understanding of art in general in two-dimensional areas, rather than complete a minor that focuses on one medium. This minor provides a broad scope of courses in 2-D media and studies. This minor is open to any USC student, especially those interested in animation to sharpen their drawing, color and compositional skills. Students interested in the vast varieties of digital visual communication can develop better color and compositional skills. Total number of units required is 28.

REQUIRED COURSES (28 UNITS)

Four lower division courses (16 units) chosen from the following:

FADN 102	Design Fundamentals	4
FADW 101	Introduction to Drawing: Studio Projects, Methods, Materials	4
FADW 201	Intermediate Drawing	4
FAIN 210	Introduction to Digital Photography	4
FAPH	Introduction to Photography	4
FAPT 105	Painting I	4
FAPT 205	Painting II	4

Three upper division courses (12 units) chosen from the following:

FADW 301	Advanced Drawing	4
FADW 331	Studies in Drawing and Painting	4, max 12
FADW 401	Topics in Advanced Drawing	4, max 12
FAPH 309A	Intermediate Photography	4
FAPR 311	Printmaking	4
FAPR 411	Topics in Advanced Printmaking	4, max 12
FAPT 305	Advanced Painting	4
FAPT 405	Topics in Advanced Painting	4, max 12

Minor in 2-D Art for Games

This interdisciplinary minor integrates three major disciplines (fine arts, computer science and interactive media) to develop the 2-D visual skills necessary to conceptualize and illustrate images for games. Skills include figure drawing, perspective, camera angles, point of view, story boarding, character development and illustration techniques. Software programs such as Illustrator, InDesign and Flash will be utilized in basic interface and interactive design assignments. Although game genres include 3-D examples, this minor will focus on the 2-D graphics for 2-D games and 3-D interface design. The minor includes fine arts courses as well as game design, game technology, production pipelines and play testing courses in computer science and interactive media. A minimum of 24-26 units is required for this minor.

REQUIRED LOWER-DIVISION COURSES

(8 UNITS)

FADN 102	Design Fundamentals	4
FADW 101	Introduction to Drawing: Studio Projects, Methods, and Materials	4

REQUIRED UPPER-DIVISION COURSES

(12-14 UNITS)

CTIN 488	Game Design Workshop	4
CTIN 491L	Advanced Game Project I (4, max 8) or	
CSCI 491abL	Final Game Project (4-2)	
FASC 436	Art and Technology	4

Four units of electives from the following:

CSCI 281	Pipelines for Games and Interactives	3
CSCI 486	Serious Games Development	3
CTAN 330	Animation Fundamentals	2
CTAN 451	History of Animation	2
CTAN 452	Introduction to 3-D Computer Animation	2, max 4
CTIN 484L	Intermediate Game Development	2
CTIN 489	Intermediate Game Design Workshop	2
CTIN 491L*	Advanced Game Project I	4, max 8
CTIN 493L	Advanced Game Project II	2, max 4
FACS 150	Visual Culture and Literacy I	4
FADN 203	Digital Tools for Design	2
FADW 201	Intermediate Drawing	4
FADW 301	Advanced Drawing	4
FAIN 210	Introduction to Digital Photography	4
FAPT 105	Painting I	4
ITP 280	Video Game Production	4

*Can be taken as an elective if not taken as upper-division requirement

Minor in 3-D Art for Games

The focus of the 3-D art for games minor is a trans-disciplinary approach that incorporates the creative, technological and team-based communication skills necessary to develop 3-D art skills for video games. It includes a choice of courses from fine arts, computer science, information technology, interactive media and animation and digital arts. In preparation for the transition from the theoretical assignment to professional practice, students will present game prototypes to outside professionals at "Demo Days" at the end of each semester. The minimum number of units is 24-27.

REQUIRED LOWER-DIVISION COURSES

(9 UNITS)

CSCI 281	Pipelines for Games and Interactives	3
FASC 106	Sculpture I	4
ITP 215Lx	3D Modeling, Animation and Special Effects	2

REQUIRED UPPER-DIVISION COURSES

(11-14 UNITS)

CTIN 488	Game Design Workshop, or	4
CSCI 486	Serious Games Development	3
CTIN 491L	Advanced Game Project I (4, max 8) or	
CSCI 491abL	Final Game Project (4-2)	
FASC 436	Art and Technology	4

ELECTIVES (4 UNITS CHOSEN FROM THE

FOLLOWING)

CSCI 180	Survey of Digital Games and Their Technologies	3
CSCI 486*	Serious Games Development	3
CTAN 330	Animation Fundamentals	2
CTAN 451	History of Animation	2
CTAN 452	Introduction to 3-D Computer Animation	2, max 4
CTIN 483	Introduction to Game Development	4
CTIN 488*	Game Design Workshop	4
CTIN 489	Intermediate Game Design Workshop	2
CTIN 491L*	Advanced Game Project I	4, max 8
CTIN 493L	Advanced Game Project II	2, max 4
FACE 214	3-D/Actual and Virtual	4
FACS 150	Visual Culture and Literacy I	4
FACS 350	Art Theory and Criticism	4
FAIN 210	Introduction to Digital Photography	4
FAIN 220	Introduction to Video and Time-based Experimentation	4
FAIN 315	Internet Studio: Online Experimentation and Expression	4
FAIN 330	Ideas in Intermedia	4
ITP 280	Video Game Production	4

*Can be taken as an elective if not taken as upper-division requirement.

Graduate Degrees

Master of Fine Arts

A two-year program administered in collaboration with the Graduate School, the Master of Fine Arts is a professional degree in the practice of art preparing students to pursue careers as professional artists. With an influential and innovative faculty and expansive facilities, the MFA program is one of the most ambitious, energetic and forward-thinking MFA programs in the United States. In addition to close, constant interaction with the permanent faculty, students participate in regular seminars, lectures, discussions, and studio visits with leading artists, critics, curators and theorists from around the world. The school's immersion in the contemporary art community is a critical component of the MFA program.

The opportunity to gain experience as a teaching assistant is available on a competitive basis. All incoming students, regardless of country of citizenship, are considered for departmental funding and teaching assistantships; a separate application is not required.

Program Requirements

At least 48 units are required for the Master of Fine Arts, to be distributed as follows: FA 515 Visiting Artist Forum, 6 units; FA 520 Individual Studies, max 16 units; FA 550 Seminar: Contemporary Issues, 4 units; FA 551 Fine Art and Interdisciplinary Studies, 8 units; FA 555 Seminar in Art Theory and Criticism, 8 units; 400- or 500-level electives outside of Fine Arts, 4 units; 594abz Master's Thesis, 4 units.

Master of Fine Arts students are evaluated by faculty during reviews held near the end of each semester. Before a student is recommended for the Master of Fine Arts, a comprehensive review of past work and professional goals is held. An exhibition of work at the end of the course of study and a written thesis, documented with visual material, complete the Master of Fine Arts program. A minimum grade point average of 3.0 on all graduate work is required for the Master of Fine Arts degree.

Master of Arts, Art and Curatorial Practices in the Public Sphere

The Master of Arts, Art and Curatorial Practices in the Public Sphere is a two-year master's degree administered by the Roski School of Fine Arts, in collaboration with the Graduate School, preparing students for careers as curators, organizers, critics and scholars. The program is an interdisciplinary research laboratory that focuses on the role of contemporary art and curatorial practices in relation to public space and the public sphere. The course of study encompasses seminars on curatorial practice/organizational methods; social, urban and media theory; critical writing; exhibition histories; and selected topics in art and architectural history. Students examine how artists, curators, organizers, architects and other cultural producers engage public space and analyze the cultural conditions of the public sphere. The program features a curatorial practicum in which students collaborate on the development and organization of a city-space exhibition project. Students are also responsible for the research and writing of a thesis that develops innovative concepts and new scholarship on the interrelationships between art, public space and the public sphere.

Admission Requirements

Requirements for admission: (1) a Bachelor of Arts or Bachelor of Fine Arts degree, or equivalent, from an accredited school; (2) a minimum 3.0 overall GPA; (3) three letters of recommendation; (4) two writing samples (one academic paper and the admission essay). The GRE General Test is required. International applicants are required to take the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS).

Thesis Requirements

A master's thesis committee comprises three members: a primary reader, a secondary reader and the director of the program. The thesis committee is established and contingent upon satisfactory completion of the second semester's course work. Advancement to candidacy is determined by the director of the program, in consultation with other faculty.

Curatorial Practicum Requirement

All students participate in the group curatorial practicum course for three consecutive terms (which complements the thesis requirement).

Program Requirements

A minimum of 33 units is required, taken during a consecutive two-year period, distributed as follows:

FIRST YEAR, FALL		UNITS
PAS 549	Methodologies of Art Writing	3
PAS 561	Curatorial/Organizational Models	2
PAS 571	Histories of Art in the Public Sphere	3
		8

FIRST YEAR, SPRING		UNITS
PAS 555a	Curatorial Practicum	2
PAS 572	Contemporary Art in the Public Sphere	3
PAS 581	Critical Conversations	3
		8

SECOND YEAR, FALL		UNITS
PAS 555b	Curatorial Practicum	2
PAS 585	Theorizing the Public Realm	3
PAS 594a	Master's Thesis	2
Elective		2
		9

SECOND YEAR, SPRING		UNITS
PAS 555c	Curatorial Practicum	2
PAS 591	Field Internship Experience	1
PAS 594b	Master's Thesis	2
Elective		3
		8

Elective Requirement

Candidates for the Master of Arts, Art and Curatorial Practices in the Public Sphere must complete a minimum of 5 units of graduate level electives, chosen from either the Master of Arts, Art and Curatorial Practices in the Public Sphere program, or another relevant area in the university (with departmental approval).

Dual Degree

Master of Arts, Art and Curatorial Practices in the Public Sphere/ Master of Planning

The Master of Arts, Art and Curatorial Practices in the Public Sphere/Master of Planning dual degree program offers an unusually rich opportunity for students interested in developing a new knowledge base to become successful professionals working in the arena of organizing art projects in urban public space, planning and community development. Los Angeles and the facilities at USC provide a unique learning laboratory to educate a more competitive professional with a better

understanding of both the administration of public art and issues of urban planning.

Students must complete the following requirements in this program: 70 units, including 28 units in the Master of Arts, Art and Curatorial Practices in the Public Sphere program, 22 in policy, planning, and development, and 20 in a field of study with no more than 8 units taken from other USC programs.

MASTER OF ARTS, ART AND CURATORIAL PRACTICES IN THE PUBLIC SPHERE (28 UNITS)			UNITS
PAS 549	Methodologies of Art Writing		3
PAS 555abc	Curatorial Practicum		2-2-2

PAS 561	Curatorial/Organizational Models	2
PAS 571	Histories of Art in the Public Sphere	3
PAS 572	Contemporary Art in the Public Sphere	3
PAS 581	Critical Conversations	3
PAS 585	Theorizing the Public Realm	3
PAS 591	Field Internship Experience	1
PAS 594ab	Master's Thesis	2-2

MASTER OF PLANNING (22 UNITS)		UNITS
PPD 500	Intersectoral Leadership	2
PPD 501a	Economics for Policy, Planning and Development	2
PPD 524	Planning Theory	2
PPD 525	Statistics and Arguing from Data	2
PPD 526	Comparative International Development	2
PPD 529	Legal Environment of Planning	2
PPD 531L	Planning Studio	4
PPD 533	Planning History and Urban Form	2
PPD 627*	Design Skills for Urban Planners	4

Note: 2-unit courses may be offered in seven-and-a-half week blocks.

*PPD 627 is the methodology course for the Preservation and Design of the Built Environment concentration. Students who choose to do a concentration other than Preservation and Design of the Built Environment need to take the respective methodology course.

Dual degree students, like all other MPL students, must take a comprehensive examination and fulfill the internship requirement.

Field of Study (20 units)

No more than 8 units from outside the Roski School of Fine Arts and the USC Price School of Public Policy. The MPL program requires students to declare their concentration during the fall semester prior to taking the comprehensive examination in the spring semester. Students are required to complete the gateway course and methodology course related to their concentration as part of their preparation for their comprehensive examination. The student's concentration must contain a 4-unit methodology course, a 4-unit gateway course and 8 other units directly concerned with the subject matter of the concentration.

Capstone Projects

Students must complete a master's thesis or final thesis project through the Roski School of Fine Arts and the MPL comprehensive examination through the USC Price School of Public Policy.

Internship

All students must complete 400 hours of internship through the USC Price School of Public Policy. This internship may be partially or completely fulfilled through prior professional experience.

Courses of Instruction

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

FINE ARTS (FA)

FA 140x A Cultural Guide to Los Angeles (2, FaSp)

An experiential and critical survey of the cultural phenomena that make up Los Angeles: dance, music, theater, film; emphasis on visual arts. Not available for major credit to fine arts majors. Graded CR/NC.

FA 207abx Two-Dimensional Art Workshop (a: 2, max 8, Fa; b: 2, max 8, FaSp) a: Studio practice to develop standards of judgment and appreciation of the visual arts. Not available for credit to studio majors. b: Continuation of a.

FA 208abx Three-Dimensional Art Workshop (a: 2, max 8, FaSp; b: 2, max 8, FaSp) a: Studio practice to develop standards of judgment and appreciation of the visual arts. Not available for credit to studio majors. b: Continuation of a.

FA 300 Professional Practices (2, FaSp) Instruction on producing written and visual documentation of art/design work, proposals, statements, and portfolios; applications for art/design employment opportunities, grants, research projects, and graduate school. Open only to sophomores, juniors and seniors.

FA 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

FA 418 Independent Studies in Studio Arts (1-4, max 10, FaSpSm) Independent research of specific topics under the direction of a faculty member. Administrative and faculty approval required. *Recommended preparation*: appropriate 300-level course work.

FA 419 Professional Internship in the Arts (2, max 4, FaSpSm) An experiential/academic opportunity in a museum, gallery, community cultural center, or related facility. Lectures, seminars, written analysis, and working internship. Open to upper division fine arts majors.

FA 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

FA 499 Special Topics (2-4, max 8, FaSpSm) Comprehensive exploration of particular aspects of visual art.

FA 515 Visiting Artist Forum (1, max 6, FaSpSm) Lecture and discussion course in the professional practice of art featuring formal presentations by visiting artists.

FA 520 Individual Studies (1-5, max 16, FaSpSm) Investigation of creative problems through various media. Course may be repeated; maximum number of units to be determined by adviser.

FA 550 Seminar: Contemporary Issues (1, max 4, FaSp) Study of issues relative to current directions in the visual arts; analysis and implications of forces contributing to conceptual development.

FA 551 Fine Art and Interdisciplinary Studies (4, max 12, Fa) Issues and theories of contemporary art in relation to philosophy, history, literature, music, theatre, film, culture, politics, science, psychology and other disciplines.

FA 555 Seminar in Art Theory and Criticism (4, max 8, Sm) An intensive seminar taught by well-known visiting critics, writers and artists addressing the deconstruction of a variety of theories in the humanities, including art, film, literature, and philosophy.

FA 590 Directed Research (1-12, FaSpSm) Research leading to the graduate degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC. *Prerequisite*: departmental approval, approval by Dean of School of Fine Arts or formal contract for research project.

FA 594abz Master's Thesis (2-2-0, FaSpSm) Credit on acceptance of thesis. Graded IP/CR/NC.

CERAMICS (FACE)

FACE 112 Ceramics (4, FaSpSm) Practical and theoretical exploration of the nature of surface, form, volume and mass as fundamental elements of clay sculpture and the ceramic object. (Duplicates credit in former FA 112.)

FACE 212 Wheel Throwing (2, FaSp) An introductory course using wheel throwing techniques for ceramics to explore a variety of forms through three-dimensional exercises. (Duplicates credit in former FA 212.)

FACE 213 Clay and Glazes (2, Sp) Provides a foundation in clay and glaze materials as they relate to making ceramic art. (Duplicates credit in former FA 213.) *Prerequisite*: FACE 112.

FACE 214 3-D/Actual and Virtual (4) A conceptually inventive introduction to clay and computer modeling. An investigation of the relationship between actual and virtual objects and how it affects our perception. (Duplicates credit in former FA 214.)

FACE 312 Advanced Ceramics (4, FaSpSm) Directed examination of aesthetic concepts and investigation into personal ideas as they relate to the development of a creative visual language in ceramics. (Duplicates credit in former FA 312.) *Prerequisite*: FACE 112.

FACE 412 Topics in Advanced Ceramics (4, max 12, FaSpSm) Continued directed examination of aesthetic concepts and investigation into personal ideas as they relate to the development of a creative visual language in ceramics. (Duplicates credit in former FA 412.) *Prerequisite*: FACE 312.

CRITICAL STUDIES (FACS)

FACS 150 Visual Culture and Literacy I (4, FaSp) Introduction to modern and contemporary visual culture with emphasis on the major aesthetic theories and practices of the past 150 years. (Duplicates credit in former FA 150.)

FACS 250 Visual Culture and Literacy II (4, FaSp)

Critical examination of the key developments and theoretical discourses of 20th century visual culture. (Duplicates credit in former FA 250.) *Recommended preparation:* FACS 150.

FACS 350 Art Theory and Criticism (4, FaSp)

An intellectual framework for the practice of art making; the historical context for current ideas. (Duplicates credit in former FA 350.)

FACS 450x Senior Seminar (4, FaSp)

Contemporary professional issues facing the studio artist; current directions in the visual arts; forces and attitudes affecting the practicing artist in our society. Available for credit to art and fine arts majors only. (Duplicates credit in former FA 450x.)

DESIGN (FADN)**FADN 102 Design Fundamentals (4, FaSp)**

Introduction to the basic elements and processes of visual communication and design. Instruction includes studio projects, lectures and readings. Various media used. (Duplicates credit in former FA 102.)

FADN 202 Design II (4, FaSp)

Exploration of essential elements of traditional and digital design, including color and image-text integration, editing information, typography and sequencing. (Duplicates credit in former FA 202.) *Prerequisite:* FADN 102; *corequisite:* FADN 203.

FADN 203 Digital Tools for Design (2, FaSp)

Exploration of the processes of germination, ideation and application/execution in design integrated with computer usage. (Duplicates credit in former FA 203.) *Corequisite:* FADN 202.

FADN 230 Three-Dimensional Design (4, FaSp)

Introduction to the study of 3-D design. Includes a wide investigation of materials, tools, and techniques specific to dimensional design as they apply to package, product, and environmental design. *Prerequisite:* FADN 102.

FADN 302 Design III (4, FaSp)

Advanced exploration of typography and image-text integration, including collaborative projects, pre-press and proofing techniques, narrative concepts and information architecture. (Duplicates credit in former FA 302.) *Prerequisite:* FADN 202.

FADN 303L Web Design (2, FaSp)

A workshop-based course that focuses on software applications in design and web design. *Prerequisite:* FADN 203.

FADN 332ab Typography (2-2, FaSp)

a: The study of visual communication through the use of letterforms from historical tradition to contemporary experimental rebellion. *b:* Continuation of *a*. (Duplicates credit in former FA 332ab.)

FADN 333 New York Design Study Tour (2, Sp)

Historical and contemporary aspects of the New York design world, including a one-week trip to New York City to visit design firms, studios and museums. Airfare and accommodations extra. By application only. (Duplicates credit in former FA 333.)

FADN 402 Advanced Design Projects (4, max 12, FaSp)

Advanced information design within a flexible curriculum. Emphasis on team-oriented projects. (Duplicates credit in former FA 402.) *Prerequisite:* FADN 302.

FADN 432 Special Projects in Design (2, max 6, FaSp)

Students work on projects for outside clients, and receive instruction in professional practices, advanced design techniques, and sophisticated technology. By invitation or portfolio review only. Only open to upper division students. (Duplicates credit in former FA 432.) *Prerequisite:* FADN 302.

DRAWING (FADW)**FADW 101 Introduction to Drawing: Studio Projects, Methods, Materials (4, FaSpSm)**

An introduction to drawing, both skill and perception oriented, as the basic tool for all the visual arts. (Duplicates credit in former FA 101a.)

FADW 201 Intermediate Drawing (4, FaSpSm)

Drawing methods and concepts, with emphasis on observing and rendering the human form and anatomy. Continued acquisition of skills, with compositional, gestural, and interpretive elements. (Duplicates credit in the former FA 101b.) *Prerequisite:* FADW 101a.

FADW 301 Advanced Drawing (4, FaSpSm)

Directed examination of personal approaches in drawing; emphasis on making visual and artistic decisions and developing an appropriate attitude towards individual expression. (Duplicates credit in former FA 301.) *Prerequisite:* FADW 201.

FADW 321 Anatomical Drawing from Life (2)

An advanced, concentrated study of the human figure; expands on skills depicting and visualizing the human form. *Prerequisite:* FADW 101, FADW 201.

FADW 331 Studies in Drawing and Painting (4, max 12, FaSpSm)

A studio examination of rotating topics in drawing/painting, either media-based or content-driven, with individual and collaborative projects; topics change each semester. By invitation only or request by portfolio submission. Open only to sophomores, juniors and seniors. (Duplicates credit in the former FA 331.) *Recommended preparation:* FADW 301 or FAPT 305.

FADW 401 Topics in Advanced Drawing (4, max 12, FaSpSm)

Continued directed examination of personal approaches in drawing, emphasis on making visual and artistic decisions and developing an appropriate attitude toward visual expression. (Duplicates credit in former FA 401.) *Prerequisite:* FADW 301.

INTERMEDIA (FAIN)**FAIN 210 Introduction to Digital Photography (4, FaSp)**

An introductory course exploring the processes and practices of digital capture, imaging and printing, from web-based image posting to large-scale printing. (Duplicates credit in former FA 210.)

FAIN 220 Introduction to Video and Time-based Experimentation (4, FaSp)

An introductory course exploring contemporary processes and practices of video experimentation including the camera, desktop production, and editing. Experimentation with multiple modes of execution, presentation, and distribution. (Duplicates credit in former FA 215 and former FA 220.)

FAIN 310 Digital Photo Studio (4, FaSp)

A technically and conceptually intensive studio in digital 2-D imaging/photography. (Duplicates credit in former FA 310.) *Prerequisite:* FAIN 210.

FAIN 315 Internet Studio: Online Experimentation and Expression (4, FaSp)

A technically and conceptually intensive studio exploring contemporary processes and practices of Internet art and online expression.

FAIN 320 Video Studio (4, FaSpSm)

An intensive video studio in the understanding and method of time-based, narrative and non-narrative art. (Duplicates credit in former FA 320.) *Prerequisite:* FAIN 220.

FAIN 330 Ideas in Intermedia (4, max 8, FaSp)

An examination of the impact of digital media on contemporary culture, with attention to a particular, changing topic each semester. (Duplicates credit in former FA 330.)

FAIN 410 Advanced Digital Photo Studio (4, max 12, FaSp)

Intensive open studio environment for individually-directed student art projects in digital media, with an emphasis on 2-D photography. (Duplicates credit in former FA 410.) *Prerequisite:* FAIN 310.

FAIN 420 Advanced Video Studio (4, max 12, FaSp)

An intensive open studio environment for individually-directed student art projects in digital media, with an emphasis on video. (Duplicates credit in former FA 420.) *Prerequisite:* FAIN 320.

PHOTOGRAPHY (FAPH)**FAPH 209 Introduction to Photography (4, FaSp)**

Introduction to the practice of photographic image-making within fine arts. Emphasis on developing technical skills in relation to personal vision. Work in black and white. (Duplicates credit in the former FA 209a.)

FAPH 309a Intermediate Photography (4)

Continued examination of the conceptual, technical, aesthetic and historical tools necessary for a well-informed deliberate art practice with an emphasis on color photography. Work is in digital or analog. *a:* Duplicates credit in the former FA 209b; *b:* Duplicates credit in the former FA 309. *Prerequisite:* FAPH 209 or FAIN 210.

FAPH 409 Topics in Advanced Photography (4, max 12, FaSp) In-depth exploration of photographic and artistic concepts as they apply to the articulation of personal work. (Duplicates credit in former FA 409.) *Prerequisite:* FAPH 309b.

PRINTMAKING (FAPR)

FAPR 311 Printmaking (4, FaSp) Introductory course in various printmaking techniques; necessary skills and inherent expressive qualities of different printmaking methods are explored. (Duplicates credit in former FA 311.)

FAPR 411 Topics in Advanced Printmaking (4, max 12, FaSp) Directed examination of specific printmaking media in relation to personal aesthetic goals and expressive concepts. (Duplicates credit in former FA 411.) *Prerequisite:* FAPR 311.

PAINTING (FAPT)

FAPT 105 Painting I (4, FaSpSm) Practical introduction to oil and acrylic pigments, painting equipment, processes, and media. Primary experience in: color, composition and perception through representational and abstract painting. (Duplicates credit in former FA 105.)

FAPT 205 Painting II (4, FaSpSm) Continuation of practical and theoretical skills introduced in Painting I. Color in personal expression, perception, and content; cultural subjects/objects and symbols signifying a personal language. (Duplicates credit in the former FA 205a.) *Prerequisite:* FAPT 105.

FAPT 305 Advanced Painting (4, FaSpSm) Directed examination of aesthetic concepts; investigation into personal ideas related to the development of a creative visual language in painting. (Duplicates credit in former FA 305.) *Prerequisite:* FAPT 205.

FAPT 331 Studies in Drawing and Painting (4, max 12, FaSpSm) (Enroll in FADW 331)

FAPT 405 Topics in Advanced Painting (4, max 12, FaSpSm) Directed painting with continued emphasis on personal choices regarding appropriation of conceptual images and arrangement, material processes, scale, number of paintings. Ongoing critical response to painting. (Duplicates credit in former FA 405.) *Prerequisite:* FAPT 305.

SCULPTURE (FASC)

FASC 106 Sculpture I (4, FaSp) Practical and theoretical introduction to sculpture as dimensional manipulation. Primary exploration of form, mass, gravity, surface, structure and associative recognition in three-dimensional art. (Duplicates credit in former FA 106.)

FASC 136 Modeling and Mold Making (2, FaSp) Introduction to plaster mold making using clay and wax for both ceramics and sculpture. Exploration of various casting materials. (Duplicates credit in former FA 136.)

FASC 206 Sculpture II (4, FaSp) Continued examination of the concepts of three-dimensional art: interrelation of material and image, public, human and intimate scale. (Duplicates credit in former FA 206.) *Prerequisite:* FASC 106.

FASC 236 Metal (2, FaSp) Introduction to metal in fine art. Emphasis on technical proficiencies and effective solutions working in a variety of metals. (Duplicates credit in former FA 236.) *Recommended preparation:* FASC 106.

FASC 246 Construction Techniques (2) Exploration of art fabrication and the techniques and philosophies of working with a variety of materials. (Duplicates credit in former FA 246.) *Recommended preparation:* FASC 106.

FASC 306 Advanced Sculpture (4, FaSp) Directed examination of three-dimensional aesthetic concepts; development of an individual creative vision. (Duplicates credit in former FA 306.) *Prerequisite:* FASC 206.

FASC 334 Space/Motion/Site: Investigating Performance and Installation (2) Exploration of performance and installation art, including historical influences and integration of multimedia and new technologies. (Duplicates credit in former FA 334.)

FASC 335 New Genres: Experimental Practices in Contemporary Art (4) Ideas in New Genres, topic changes each semester. (Duplicates credit in former FA 335.)

FASC 366 Art and Site (4) Exploration focusing on site as a major component of artwork in both content and form, emphasizing multidimensional work in relation to context, material and intent. (Duplicates credit in former FA 366.) *Prerequisite:* FASC 106.

FASC 406 Topics in Advanced Sculpture (4, max 12, FaSp) Individual direction of the study of aesthetic issues in sculpture; investigation of an individual creative vision. (Duplicates credit in former FA 406.) *Prerequisite:* FASC 306.

FASC 436 Art and Technology (4, FaSp) An interdisciplinary course between art and engineering that addresses creative thinking in the manipulation of media and the communication of ideas. (Duplicates credit in former FA 436.)

PUBLIC ART STUDIES (PAS)

PAS 371 Art in the Public Realm: Contemporary Issues (4, FaSp) Critical frameworks and theoretical perspectives of contemporary public art issues explored through case studies and discussions with artists, architects, and designers engaging the public realm.

PAS 400 New Models of Art in City-Space (4) A focused examination of innovative processes utilized by contemporary local, national and international artists working in the public/social spaces of cities.

PAS 499 Special Topics (2-4, max 8, FaSp) Comprehensive exploration of particular aspects of public art.

PAS 549 Methodologies of Art Writing (3, Fa) Writing methods on art practices in the public sphere and public space, by curators, organizers, critics, scholars and artists.

PAS 550 Social Space, Publics and Counter-Publics (1) Seminar on interconnections between art, social space, media culture, in relation to notions of audience, community, and publics.

PAS 555abc Curatorial Practicum (a: 2, Sp; b: 2, Fa; c: 2, Sp) Students collaborate as a group for three terms to conceptualize and organize an exhibition project in an urban public space.

PAS 561 Curatorial/Organizational Models (2, Fa) Overview of strategies utilized by art organizations, curators, museums and non-profit/alternative spaces to conceptualize, develop, and organize art projects in the public realm.

PAS 571 Histories of Art in the Public Sphere (3, Fa) Topics in the history of the avant-garde in relation to public space and the public sphere, focusing on critical moments during the 20th Century.

PAS 572 Contemporary Art in the Public Sphere (3, Sp) Thematic investigation of artists who engage social space/the public realm, emphasizing practices and critical issues in contemporary art from the 1970s to the present.

PAS 581 Critical Conversations (3, Sp) A series of conversations with visiting artists, curators, organizers, critics, architects and theorists on seminal issues regarding the public sphere and public space.

PAS 582 Seminar: Contemporary Issues (3) Thematic seminar on the most recent developments of art in public space, and analysis of debates regarding the theorization of public space/the public sphere. Graded CR/NC.

PAS 585 Theorizing the Public Realm (3, Fa) Interdisciplinary exploration of theories of public space and the public domain, from the 19th century to the present.

PAS 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PAS 591 Field Internship Experience (1, max 2, FaSpSm) Supervised internship in an art institution or an art agency, or with an independent curator or artist, on projects and research specific to public space. Graded CR/NC. *Recommended preparation:* completion of first year of courses.

PAS 594abz Master's Thesis (a: 2, Fa; b: 2, Sp; z: 0, FaSpSm) Credit on acceptance of thesis. Graded IP/CR/NC.

PAS 599 Special Topics (2-4, max 8)



At the USC Davis School of Gerontology, students like Student Gerontology Association president Cameron Chalfant, pictured here with Saemy Son, enhance their learning through volunteer work, research opportunities and internships with local organizations, national institutes and international centers in Canada and Japan.

The USC Davis School of Gerontology explores all aspects of human development and aging. Course work and research opportunities in biology, psychology, sociology, policy and aging services make up its multidisciplinary curriculum.

Founded in 1975, USC Davis is not only the nation's premier school of gerontology, it is also the first. Named in honor of Leonard Davis, a philanthropist and businessman who pioneered insurance plans for the elderly through his involvement in AARP and his own company Colonial Penn Life Insurance, the school provides ground-breaking solutions to issues facing an aging population.

USC Davis is committed to providing students with a broad theoretical understanding of lifespan development as well as dynamic post-graduate career placement. Students on all levels often enroll in semester-long internship programs. Working with our internship director, students can apply their gerontological knowledge to an array of industries such as health, medicine, business, finance, policy, direct services, program development, counseling and many other fields.

USC Davis School's Bachelor of Science degrees can be pursued with a health science, a social science or a global emphasis. The school also offers four master's degrees, eight dual master's programs, a graduate certificate, and an esteemed Ph.D. program in gerontology.

The school's research and services arm is the Ethel Percy Andrus Gerontology Center. The ever-expanding center now houses the USC Biology of Aging Program, the California Center for Long Term Care Integration, the Fall Prevention Center of Excellence, the Long Beach Longitudinal Study, the Longitudinal Study of Generations, the Society for the Study of Social Biology, and the USC/UCLA Center on Biodemography and Population Health.

USC Davis School of Gerontology**(213) 740-5156****FAX: (213) 740-0792****Email: ldsgero@usc.edu****usc.edu/gero****Administration**

Pinchas Cohen, M.D., *Dean and Executive Director of the Ethel Percy Andrus Gerontology Center*
 Kelvin J.A. Davies, Ph.D., D.Sc., *Vice Dean and Director of the Ethel Percy Andrus Gerontology Center*
 Maria Henke, M.A., *Associate Dean, USC Davis School of Gerontology*

Faculty

William and Sylvia Kugel Dean's Chair in Gerontology:
 Pinchas Cohen, M.D.

AARP University Chair in Gerontology: Eileen Crimmins, Ph.D.*

ARCO/William F. Kieschnick Chair in the Neurobiology of Aging: Caleb E. Finch, Ph.D.*

James E. Birren Chair in Gerontology: Kelvin J.A. Davies, Ph.D., D.Sc.*

The Golden Age Association/Frances Wu Chair in Chinese Elderly: Iris Chi, Ph.D. (Social Work)

Edna M. Jones Chair in Gerontology: Valter D. Longo, Ph.D.

Rita and Edward Polusky Chair in Education and Aging: Elizabeth M. Zelinski, Ph.D.*

UPS Foundation Chair in Gerontology: Jon Pynoos, Ph.D.*

Merle H. Bensinger Professor of Gerontology: Bob G. Knight, Ph.D.*

Mary Pickford Foundation Professor of Gerontology:
 Kathleen H. Wilber, Ph.D.*

Albert L. and Madelyne G. Hanson Family Trust Assistant Professor: Susan H. Enguidanos, Ph.D.*

Professors: Kathleen Chambers, Ph.D. (Psychology); Margaret Gatz, Ph.D. (Psychology); Martin Levine, Ph.D. (Law, Psychiatry and the Behavioral Sciences); Mara Mather, Ph.D.; John J. McArdle, Ph.D. (Psychology); Michal Mor-Barak, DSW (Social Work); Roseann Mulligan, DDS (Dentistry); Robert C. Myrtle, DPA (Public Policy); Mike Nichol, Ph.D. (Pharmacy and Public Policy); Christian Pike, Ph.D.; Victor Regnier, M.Arch. (Architecture); Edward L. Schneider, M.D.; Lon Schneider, M.D. (Psychiatry and Neurology); John Tower, Ph.D. (Biological Sciences); Bradley R. Williams, Pharm.D. (Clinical Pharmacy)

Associate Professors: Maria Aranda, Ph.D. (Social Work); Loren G. Lipson, M.D. (Medicine); Jeffrey McCombs, Ph.D. (Pharmacy); John P. Walsh, Ph.D.*

Assistant Professors: Cleopatra Abdou, Ph.D.; Sean Curran, Ph.D.*; Tara Lynn Gruenewald, Ph.D.; Natalie Leland, Ph.D. (Occupational Therapy); Ana Marie Yamada, Ph.D. (Social Work)

Research Professors: Todd Morgan, Ph.D.; Albert Rizzo III, Ph.D.

Research Associate Professors: Gennady Ermak, Ph.D.; Roseann Giarrusso, Ph.D.; Jung Ki Kim, Ph.D.

Research Assistant Professors: Donna Benton, Ph.D.; Thomas Parsons, Ph.D.

Adjunct Professors: Neal Cutler, Ph.D.; Fernando Torres-Gil, Ph.D.*

Adjunct Associate Professors: Joanna Davies, Ph.D.; Monika White, Ph.D.

Adjunct Research Professor: Larry Rubenstein, Ph.D.

Adjunct Research Assistant Professor: Tracy Armstrong, Ph.D.

Adjunct Clinical Professor: Robert M. Tager, M.D.

Clinical Professor: Anne Katz, Ph.D.

Clinical Associate Professors: Raquel D. Arias, M.D.; Michael Gilewski, Ph.D.; Carl Renold, Ph.D.; Debra Sheets, Ph.D.

Clinical Assistant Professors: Aaron Hagedorn, Ph.D.; Freddi Segal-Gidan, Ph.D.

Emeritus Professors: Vern Bengtson, Ph.D.; James E. Birren, Ph.D.; Gerald A. Larue, Ph.D.

Emeritus Associate Professor: Phoebe Liebig, Ph.D.

**Recipient of university-wide or college teaching award.*

Programs

The Davis School of Gerontology offers a Bachelor of Science in Human Development and Aging, a Bachelor of Science in Lifespan Health, undergraduate classes through the health and humanity major in the USC Dornsife College of Letters, Arts and Sciences, two minors in aging and a progressive Master of Science in Gerontology open to all undergraduate students.

The School of Gerontology offers several graduate degrees including: a Master of Science in Gerontology; a Master of Aging Services Management; a Master of Arts in Gerontology; a Master of Long Term Care Administration (with the Marshall School of Business and the Price

School of Public Policy). All master's degrees are offered online and onsite. The School of Gerontology offers the premiere Ph.D. in Gerontology program in the nation. The program is not offered online. Non-degree graduate students may complete 16 units of gerontology and be awarded a graduate level certificate in gerontology (also available online).

Master's degree students may pursue one of several dual degrees, which are jointly offered with other professional schools. These are the Master of Science in Gerontology and the Master of Business Administration (M.S./MBA) with the Marshall School of Business; the Master of Science in Gerontology and the Doctor of Dental Surgery (M.S./DDS) with the Ostrow School of Dentistry; the Master of Science in Gerontology and the Juris Doctor (M.S./J.D.) with the Gould School of Law; the Master of Science in Gerontology and the Master of Public Administration (M.S./MPA), the Master of Science in Gerontology and the Master of Health Administration (M.S./MHA), and the Master of Science in Gerontology and the Master of Planning (M.S./MPL) with the Price School of Public Policy; the Master of Science in Gerontology and the Master of Social Work (M.S./MSW) with the School of Social Work; and the Master of Science in Gerontology and the Doctor of Pharmacy (M.S./Pharm.D.) with the School of Pharmacy.

In addition to the degree and minor programs, overview courses in aging are offered for undergraduates enrolled in other units of the university. Many gerontology courses can be credited as elective units.

Honor Society

The student honor society is Sigma Phi Omega, the national honor society formed in 1980 to recognize the excellence of those who study gerontology. The organization seeks to promote scholarship and professionalism, and to recognize exemplary attainment in the field of aging. Undergraduates must have a GPA of at least 3.3 and graduate students a GPA of at least 3.5. Sigma Phi Omega is administered by the Association for Gerontology in Higher Education, an educational unit of the Gerontological Society of America.

Ethel Percy Andrus Gerontology Center

The Andrus Gerontology Center initiates, designs and executes basic and applied research on the many phases of development and aging, and provides for graduate and post-graduate training in the biological, social, behavioral and policy sciences. Specific areas of study include neurobiology, cognitive science, biology, social organization behavior, human service delivery, biodemography and social policy.

The Andrus Center offers a multidisciplinary research training program in gerontology. It is directed toward graduate students pursuing the Ph.D. as well as a limited number of post-doctoral fellows who develop research and academic careers in specialized areas of gerontology. Research training is carried out within individual disciplines.

Undergraduate Programs

Bachelor of Science in Human Development and Aging

The Bachelor of Science in Human Development and Aging is an undergraduate degree offered at the USC Davis School of Gerontology in the social sciences. Students in this program often pursue careers related to older adults in business, law, the nonprofit sector or government agencies.

Students may also specialize in a health science track. The health science track combines the core gerontology curriculum with the prerequisites for admission to medical school and other health-related fields including: dentistry, pharmacy, occupational/physical therapy, physician assistant programs and others. In addition, students will participate in a supervised practicum experience in which they will become directly involved with aging clients in a health care setting.

Students planning to pursue a B.S. are urged to notify the school of this intent as early as possible during their undergraduate study. This will help ensure that the student receives proper advisement and that the student is alerted to any special requirements or program modifications.

During the freshman and sophomore years, students enroll primarily in general education required courses as specified by the university and the Human Development and Aging gateway course (GERO 200).

During their junior and senior years, students enroll in required and elective courses in the School of Gerontology as well as other courses throughout the university. These courses are selected in consultation with an adviser and reflect the personal and professional interests of the students.

The honors program is available to juniors who maintain a GPA of 3.5 in gerontology and a GPA of 3.3 in other USC course work. The honors program includes mentored training in research and course work relevant to research methodology and statistics.

A grade point average of at least C (2.0) on all units attempted at USC is required for undergraduate degrees. The School of Gerontology requires a minimum 2.0 grade point average in upper division courses applied toward the major.

General Education Requirements

The university's general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to be considered a generally well-educated person. This program requires six courses in different categories, plus writing and diversity requirements, which together comprise the USC Core. See pages 63xx and 250xx for more information.

Foreign Language or Programming Skills (12 Units)

Students must satisfy the skill level requirement in one language or complete ITP 101x and additional ITP 100-level programming courses to total 12 units. Students in the health science track are required to complete only ITP 101x.

Degree Requirements

REQUIRED COURSES		UNITS
GERO 200	Gerontology: The Science of Adult Development	4
GERO 320	Psychology of Adult Development	4
GERO 330	Society and Adult Development	4
GERO 340	Policy, Values, and Power in an Aging Society	4
GERO 350	Administrative Problems in Aging	4
GERO 416	Health Issues in Adulthood	4
GERO 481	Case Management for Older Adults	4
GERO 491	Practicum	4
GERO 492	Senior Seminar	4
	General Education	24
	Writing Requirement	8
	Foreign Language or Programming	12
	Gerontology electives	12
	One approved statistics course	4
	General electives in gerontology or related disciplines (8 units upper division)	32
Total: 128		

RECOMMENDED GENERAL ELECTIVES		UNITS
ANTH 305	Childhood, Birth and Reproduction	4
HP 402	Maternal and Child Health	4
LING 405	Child Language Acquisition	4
PSYC 100	Introduction to Psychology	4
PSYC 336L*	Developmental Psychology	4
PSYC 437*	Adolescent Development	4
SOCI 305	Sociology of Childhood	4
SOCI 369	The Family in a Changing Society	4
SOCI 385	Population, Society, and Aging	4

*Prerequisite required.

Health Science Track in Human Development and Aging

Requirements for Admission

The listed requirements for admission to the health science track in human development and aging will not differ from existing requirements for admission to the Bachelor of Science in Human Development and Aging. However, because health professional schools are very competitive, USC students interested in this program will be expected to have achieved at least a 3.0 grade point average (A = 4.0). Students entering the program from high schools or transferring from community colleges will also be expected to meet the minimum admission standards.

Degree Requirements

SCIENCE AND MATHEMATICS		UNITS
BISC 120Lx	General Biology: Organismal Biology and Evolution	4

BISC 220L	General Biology: Cell Biology and Physiology	4
CHEM 105abL*	General Chemistry	4-4
CHEM 322abL*	Organic Chemistry	4-4
MATH 125*	Calculus I	4
PHYS 135abL*	Physics for the Life Sciences	4-4
		36

GERONTOLOGY UPPER DIVISION CORE COURSES		UNITS
GERO 310*	Physiology of Aging	4
GERO 320	Psychology of Adult Development, or	
GERO 330	Society and Adult Development	4
GERO 340	Policy, Values, and Power in an Aging Society	4
GERO 414*	Neurobiology of Aging	4
GERO 495	Practicum in Geriatric Care	4
		20

ADDITIONAL REQUIREMENTS		UNITS
ITP 101x	Introduction to Information Technology	4
	General Education	24
	Writing Requirement	8
	Gerontology upper division electives	12
	General electives in gerontology or related disciplines (8 units upper division)	24
		72

Total: 128

RECOMMENDED GENERAL ELECTIVES		UNITS
ANTH 305	Childhood, Birth and Reproduction	4
BISC 480*	Developmental Biology	4
HP 402	Maternal and Child Health	4
LING 405	Child Language Acquisition	4
PSYC 100	Introduction to Psychology	4
PSYC 336L*	Developmental Psychology	4
PSYC 437*	Adolescent Development	4
SOCI 305	Sociology of Childhood	4
SOCI 369	The Family in a Changing Society	4
SOCI 385	Population, Society, and Aging	4

*Prerequisite required.

Honors Program in Human Development and Aging

USC Davis offers an honors program to outstanding students already pursuing studies for the B.S. in Human Development and Aging degree. This program offers students an opportunity to participate in mentored undergraduate research, taking course work in research methods and statistics in aging, and experience in writing an honors thesis that summarizes the research project. Honors students are required to complete GERO 497abc for a total of 6-8 units, beginning in the fall or spring of the junior year. In the senior year, they must complete GERO 593 Research Methods with a minimum grade of B. GERO 593 is offered only in the fall semester. Completion of the program requires a minimum GPA of 3.5 in gerontology and 3.3 in other courses. The program leads to the designation on the transcript of Bachelor of Science in Human Development and Aging with Honors.

The student takes 2 units of GERO 497a in the fall or spring of the junior year as a mentored research course to begin the process of developing an honors thesis. This would be in lieu of elective units. In the fall of the junior or senior year the student would complete GERO 593 for 4 units and 2 units of GERO 497b, both in lieu of elective units. Also during the fall semester, the research design and methods for the honors thesis are finalized and the research project begun. In the spring, the student would register for 2–4 units of GERO 497c in lieu of elective units. The goal for that semester is to complete the research and write the honors thesis.

Degree Requirements

REQUIRED COURSES		UNITS
GERO 200	Gerontology: The Science of Adult Development	4
GERO 320	Psychology of Adult Development	4
GERO 330	Society and Adult Development	4
GERO 340	Policy, Values, and Power in an Aging Society	4
GERO 350	Administrative Problems in Aging	4
GERO 416	Health Issues in Adulthood	4
GERO 481	Case Management for Older Adults	4
GERO 491	Practicum	4
GERO 492	Senior Seminar	4
General Education		24
Writing Requirement		8
Foreign Language or Programming		12
Gerontology electives		12
One approved statistics course		4
Electives in gerontology and related disciplines		20–22 116–188

GERONTOLOGY HONORS COURSES		UNITS
GERO 497abc*	Honors Seminar	2, 2, 2–4
GERO 593	Research Methods	4 10–12

Total: 128

Requirements for Completion of the Health Science Honors Track

SCIENCE AND MATHEMATICS		UNITS
BISC 120Lx	General Biology: Organismal Biology and Evolution	4
BISC 220L	General Biology: Cell Biology and Physiology	4
CHEM 105abl*	General Chemistry	8
CHEM 322abl*	Organic Chemistry	8
MATH 125*	Calculus I	4
PHYS 135abl*	Physics for the Life Sciences	8 36

GERONTOLOGY UPPER DIVISION CORE COURSES		UNITS
GERO 310*	Physiology of Aging	4
GERO 320	Psychology of Adult Development, or	
GERO 330	Society and Adult Development	4

GERO 340	Policy, Values and Power in an Aging Society	4
GERO 414*	Neurobiology of Aging	4
GERO 495	Practicum in Geriatric Care	4 20

ADDITIONAL REQUIREMENTS		UNITS
ITP 101X	Introduction to Information Technology	4
General Education		24
Writing Requirement		8
Gerontology upper division electives		8
Electives in gerontology and related disciplines		16–18 60–62

GERONTOLOGY HONORS COURSES		UNITS
GERO 497abc*	Honors Seminar	2, 2, 2–4
GERO 593	Research Methods	4 10–12

Total: 128

*Prerequisite required.

Bachelor of Science in Lifespan Health

The Bachelor of Science in Lifespan Health prepares students for admission to a graduate or professional school with an emphasis on the biomedical aspects of health including disease prevention, detection and treatment. This program is designed for students wishing to pursue graduate studies in a health field such as medicine, pharmacy, occupational/physical therapy, psychology and other related fields.

Admission to this program is granted through USC's admission process, described in the admission section of this catalogue. The same foreign language requirement for the B.S. in Human Development and Aging is required as well as the USC Core (see pages 63xx and 250xx for more information). Students must enroll in the following courses:

GERONTOLOGY REQUIRED COURSES		UNITS
GERO 200	Gerontology: The Science of Adult Development	4
GERO 310*	Physiology of Aging	4
GERO 320	Psychology of Adult Development	4
GERO 416	Health Issues in Adulthood	4
GERO 483	Global Health and Aging	4
GERO 492	Senior Seminar	4
GERO 495	Practicum in Geriatric Care	4

Choose three from the following four courses:

GERO 414*	Neurobiology of Aging	4
GERO 437**	Social and Psychological Aspects of Death and Dying	4
GERO 475	Ethical Issues in Geriatric Care	4
GERO 481	Case Management for Older Adults	4

Electives		32
Gerontology electives		12

*Prerequisite required.

**GERO 437 must be taken for 4 units of credit

Bachelor of Arts in Health and Humanity

The USC Davis School of Gerontology offers undergraduate classes through the Health and Humanity major in the USC Dornsife College of Letters, Arts and Sciences (see page 364xx).

Progressive Degree in Gerontology/Master of Science in Gerontology

The progressive degree program allows high performing students to integrate their current undergraduate major with a Master of Science in Gerontology. Students with at least a 3.0 overall GPA may apply for admission to the degree program in their junior year.

Students will meet with the gerontology student adviser to develop a course plan that must be approved by the School of Gerontology and the student's home department. Students admitted into the progressive degree program begin taking master's level courses in their senior year and will complete the master's degree in year five. For more information on the admission process, see the gerontology student adviser. For further details on progressive degree programs, see page 86xx.

Minors in Aging

The undergraduate minor program gives students the option of combining their major with an emphasis in gerontology, the study of aging. The minors provide students with the opportunity to supplement their education with a life course perspective of aging processes.

The minor programs, which are multidisciplinary in nature, allow the student to survey the sociological, political, psychological and biological aspects of aging; to gain an understanding of the current services available to older persons; and to examine the contemporary policy issues facing the field.

Individuals, Societies and Aging

This minor is a fit for students in business, engineering, communication, cinematic arts, or arts and sciences interested in developing a broad knowledge of issues in aging. Based largely on disciplines in the behavioral and social sciences, students learn how aging will impact their lives, families and careers. Upon completion of 20 units and graduation, the minor is noted on the student's transcript.

REQUIRED COURSES		UNITS
GERO 320	Psychology of Adult Development	4
GERO 330	Society and Adult Development	4
GERO 340	Policy, Values, and Power in an Aging Society	4

Select two from the following:

GERO 380	Diversity in Aging	4
GERO 416	Health Issues in Adulthood	4
GERO 435	Women and Aging: Psychological, Social and Political Implications	4
GERO 437	Social and Psychological Aspects of Death and Dying	4

GERO 481	Case Management for Older Adults	4
GERO 491	Practicum	4
		<hr/> 20

Science, Health and Aging

The science, health and aging minor is appropriate for students working toward careers in medicine, dentistry, pharmacy, biological sciences, public health or other health related fields. Admission to the minor is only available to students who have completed 4 units

of prerequisites (BISC 220L or BISC 221L) as part of their major requirements. Upon completion of 20 units and graduation, the minor is noted on the student's transcript.

REQUIRED COURSES		UNITS
GERO 310	Physiology of Aging	4
GERO 414	Neurobiology of Aging	4
GERO 416	Health Issues in Adulthood, or	
GERO 496	Introduction to Clinical Geriatrics	4

Select two from the following:

GERO 415	Neuroaffective Disorders of Aging	4
GERO 421	Managed Care for an Aging Society	4
GERO 437	Social and Psychological Aspects of Death and Dying	4
GERO 475	Ethical Issues in Geriatric Health Care	4
GERO 495	Practicum in Geriatric Care	4
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Graduate Degrees

Master's Degrees in Gerontology

Master of Science in Gerontology

The Master of Science in Gerontology prepares graduates to assume major leadership roles in the field of aging, primarily in the planning, administration and evaluation of programs in the private and public sectors, as well as executive positions in the delivery of direct services to older people and their families and in the instruction of older adults and service providers. The Master of Science in Gerontology requires 44 units of course work. This includes 32 units of required courses and 12 units of electives. As part of this curriculum, a field practicum assures that these skills can be applied in agencies and institutional settings.

All students take core courses in physiological, psychological, sociological, social policy and professional issues relating to aging, as well as research methods and the capstone course.

The course work includes instruction on the processes of aging and professional courses designed to develop the skills needed for practice. The field practicum includes one or two semesters of practical experience working in an organizational setting.

Continuous registration in the program is required. There is a five year completion time limit for the degree. Leaves of absence are available for limited times and are excluded from the total time limit. A maximum of two absences (one year each) is allowed. Most courses are offered on campus and online.

Prerequisites for Admission

Students applying for admission to the Master of Science in Gerontology program must have a bachelor's degree from an accredited college or university. In selecting applicants for admission, the School of Gerontology considers both academic potential (as reflected in undergraduate study and scores on the Graduate Record Examinations) and professional potential (as reflected in experience, references and career goals). The school requests information from applicants to supplement that supplied by the USC Application for Graduate Admission. Such supplemental information usually includes a resume, statement of interest in gerontology and letters of reference. Interviews may be required.

Probation and Disqualification

Probation and Warning Any graduate student whose cumulative or semester grade point average in the university falls below B (3.0) will be placed on academic probation. A graduate student whose semester average

falls below B (3.0) but whose cumulative grade point average in the university is 3.0 (A = 4.0) or higher will be placed on academic warning.

Disqualification A graduate student on academic probation will be disqualified if his or her cumulative record accumulates more than 12 units of C work. A graduate student, whether on probation or not, will be subject to disqualification if the Student Affairs Committee of the USC Davis School at any time determines deficiency in academic achievement.

Common Requirements

All candidates for the Master of Science degree must complete the following common requirements:

REQUIRED COURSES		UNITS
GERO 510	Physiology of Development and Aging	4
GERO 520	Life Span Developmental Psychology	4
GERO 530	Life Span Developmental Sociology	4
GERO 540	Social Policy and Aging	4
GERO 589	Case Studies in Leadership and Change Management	4
GERO 591	Field Practicum	4
GERO 593	Research Methods	4
		<hr/> 28

Capstone Course

GERO 555	Integrating Gerontology: A Multidisciplinary Approach	4
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Suggested Electives (12 Units)

GERO 522	Counseling Older Adults and Their Families	4
GERO 543	Continuum of Care: A Systems Perspective	4
GERO 550	Administration and System Management in Programs for Older Adults	4
GERO 551	Applied Policy Skills in Aging	4
GERO 554	Evaluation: Incorporating Evidence-Based Practices	4
GERO 591	Field Practicum	4

Common requirements for all programs include the 28 required units and GERO 555, totaling 32 units. In addition, each candidate must complete the 12 units of electives chosen from the complete list of electives approved by the student's adviser.

Field Practicum

The field practicum provides the opportunity for the student to gain valuable experience and develop needed skills by working in a community agency or institution. It involves a minimum of 240 hours of involvement. Students may elect to take an additional 4 units of GERO 591 Field Practicum as an elective.

Field placement assignments are made by the internship coordinator of the school in consultation with the student and in accordance with the resources available in the community. Every effort is made to secure placement which will reflect the student's capacity to assume the responsibilities of a professional in gerontology. Evaluations of the student's performance are sent to the school by the community agency; the student receives a grade of credit/no credit in GERO 591 Field Practicum.

Master of Science with Specialization in the Health Service Area and Ambulatory Care Certificate

In addition to the 32 units of common requirements for the M.S. in Gerontology, the following courses are required to earn the certificate.

CORE COURSES		UNITS
PPD 509	Problems and Issues in the Health Field	4
PPD 510a	Financial Management of Health Services, or	
PPD 516	Financial Accounting for Health Care Organizations	4
PPD 545	Human Behavior in Public Organizations, or	
PPD 557	Modeling and Operations Research	4
Elective		4
		<hr/> 16

ONE SPECIALIZED COURSE FROM THE FOLLOWING:

GERO 550	Administration and System Management in Programs for Older Adults	4
PPD 600	Management of Managed Care Organizations	4
PPD 601	Management of Long-Term Care Organizations	4

Advanced Placement Master of Science in Gerontology

The Advanced Placement M.S. program allows the outstanding student who has completed a Bachelor of

Science in Gerontology to waive several courses in order to complete the master's degree in 36 units rather than the 44 units for the regular program.

REQUIRED COURSES		UNITS
GERO 510	Physiology of Development and Aging, or	
GERO 520	Life Span Developmental Psychology, or	
GERO 530	Life Span Developmental Sociology, or	
GERO 540	Social Policy and Aging	4
GERO 555	Integrating Gerontology: A Multidisciplinary Approach	4
GERO 591	Field Practicum	8
GERO 593	Research Methods	4
Gerontology skill requirements		12
Gerontology electives		4
		36

Program Adaptation

Three of the following courses, GERO 510, GERO 520, GERO 530 and GERO 540, will be waived for students in the advanced placement track. Advanced placement students admitted to dual degree programs (page 706xx) must meet curriculum requirements for the respective programs.

Progressive Degree in Gerontology

A progressive degree program allows qualified undergraduate students the opportunity to complete an integrated program of study joining a bachelor's degree and a master's degree in the same or different departments.

The progressive degree program in gerontology allows students in their junior year to apply for the Master of Science in Gerontology program and complete both degrees in five years. Students must fulfill all the requirements for both the bachelor's degree and the master's degree, however, may be reduced by a maximum of one third. Students must obtain permission from both the bachelor's degree granting program and the USC Davis School of Gerontology. This program may be particularly attractive to students majoring in biology, psychology, policy and sociology. For more information on progressive degrees, see the entry under Undergraduate Programs, page 67xx, or Graduate and Professional Education, page 87xx.

Master of Aging Services Management

The Master of Aging Services Management provides an opportunity for those seeking careers in the aging services industries to acquire skills and knowledge related to management of services, products and programs for older persons. The program requires a minimum of 12 units of core courses (three courses) and 20 units of electives (five courses). All graduate level courses are offered on campus and via the Internet. Continuous registration in the program is required. Leaves of absence are available for limited times and are excluded from the total time.

In order to participate in online courses, students will be required to have access to a computer with multimedia capability including a modem, printer and CD-ROM drive; an Internet provider with email and an Internet browser; and word processing software.

Specific details regarding the computer requirements will be provided by the department. This program is available as a progressive degree (see Progressive Degree in Gerontology).

Students applying to the Master of Aging Services Management must have a bachelor's degree from an accredited college or university with a GPA of 3.0. If the applicant's GPA falls below 3.0 the GRE will be required.

Students must choose a minimum of 12 units of core courses from the following:

CORE COURSES (MINIMUM OF 12 UNITS)		UNITS
GERO 500	Perspectives on a Changing Society: An Introduction to Aging	4
GERO 501	Applied Legal and Regulatory Issues in Aging	4
GERO 502	Marketing and Shifts in Consumer Decision Making	4
GERO 504	Current Issues in Aging Services Management	4
GERO 589	Case Studies in Leadership and Change Management	4
		12

Students must select up to five courses (for a total of 20 units) from the following courses or any other adviser-approved elective:

SUGGESTED ELECTIVE COURSES (20 UNITS)		UNITS
GERO 505	Behavioral and Social Consequences of Design and Environment	4
GERO 506	Technological Innovations in Aging (Gerontechnology)	4
GERO 507	End of Life Care	4
GERO 508	The Mind and Body Connection through the Lifespan	4
GERO 510	Physiology of Development and Aging	4
GERO 520	Life Span Developmental Psychology	4
GERO 522	Counseling Older Adults and Their Families	4
GERO 530	Life Span Developmental Sociology	4
GERO 540	Social Policy and Aging	4
GERO 541	Health Care Delivery Models: Comparative Approaches	4
GERO 543	Continuum of Care: Systems Perspective	4
GERO 550	Administration and Systems Management in Programs for Older Adults	4
GERO 551	Applied Policy Skills in Aging	4
GERO 554	Evaluation: Incorporating Evidence-Based Practices	4
GERO 560	Complementary Medicine for Health and Longevity	4
GERO 585	The Aging Family	4
GERO 593	Research Methods	4
Total:		20

Master of Arts in Gerontology

The M.A. in Gerontology provides an opportunity to acquire skills and formal training in gerontology. The

online program requires 28 units of course work. Most courses are offered online and on campus.

Continuous registration in the program is required. Leaves of absence are available for limited times and are excluded from the total time limit.

In order to participate in the online courses, students will be required to have access to a multimedia computer with modem, printer and CD-ROM drive; an Internet provider with email and an Internet browser; and word processing software. Specific details regarding the computer requirements will be provided by the department.

Admission standards and prerequisites are the same as listed for the Master of Science in Gerontology with the exception that students in the online M.A. program are expected to have a significant amount of experience working in human services, health care, business or similar settings. Students are not required to have taken an approved additional course.

REQUIRED COURSES (20 UNITS)		UNITS
GERO 500	Perspectives on a Changing Society: An Introduction to Aging	4
GERO 508	The Mind and Body Connection through the Lifespan	4
GERO 520	Life Span Developmental Psychology	4
GERO 530	Life Span Developmental Sociology	4
GERO 540	Social Policy and Aging	4
		20

Students must select two courses (for a total of 8 units) from the following courses:

ELECTIVE COURSES (8 UNITS)		UNITS
GERO 522	Counseling Older Adults and Their Families	4
GERO 550	Administration and System Management in Programs for Older Adults	4
GERO 560	Complementary Medicine for Health and Longevity	4
GERO 585	The Aging Family	4
GERO 589	Case Studies in Leadership and Change Management	4
Total:		28

Graduate Level Certificate in Gerontology

The residential graduate certificate in gerontology program provides an opportunity for those who have completed a bachelor's degree in another profession or discipline and are employed in the field of aging to acquire a greater understanding of gerontology theory and research. The program consists of 16 units of gerontology content designed to familiarize the student with several areas of the field which relate to professional practice.

In addition to three of the four required core course areas for the certificate program (GERO 510, GERO 520 or GERO 522, GERO 530 or GERO 585, GERO 540), each student will have the option to choose one elective course which meets his or her particular area of interest.

Certificate students do not take a field practicum. Students admitted to the non-degree certificate

program are expected to enroll each semester until the program is completed.

Online Graduate Level Certificate in Gerontology

The online graduate certificate in gerontology program provides an opportunity for those with a bachelor's degree in another profession or discipline who are employed in the field of aging to acquire a greater understanding of gerontology theory and research. The program consists of 16 units of gerontology courses designed to familiarize the student with several areas of the field which relate to professional practice.

Students complete the introductory course, GERO 500, two of the four required core course areas (GERO 508 or GERO 510 or, GERO 520 or GERO 522, GERO 530 or GERO 585, and GERO 540), and one elective course in a particular area of interest.

The required courses are delivered via the Internet. The courses are offered in sequential order and are restricted by availability. Continuous registration in the non-degree program is required. Leaves of absence are available for limited times and are excluded from the total time limit. Entering students are encouraged to begin their course of study by taking GERO 500.

In order to participate in the online courses, students will be required to have access to a multimedia computer with modem, printer and CD-ROM drive; an Internet provider with email and an Internet browser; and word processing software. The department will provide specific details regarding the computer requirements.

Master of Long Term Care Administration

The Master of Long Term Care Administration provides an opportunity for professionals who are currently working in a long term care profession to acquire skills and formal training in long term care administration. The online program requires 28 units of course work.

The required courses are in sequential order and are restricted by availability. Continuous registration in the program is required. Leaves of absence are available for limited times and are excluded from the total time limit.

In order to participate in the online courses, students will be required to have access to a multimedia computer with modem, printer and CD-ROM drive; an Internet provider with email and an Internet browser; and word processing software. Specific details regarding the computer requirements will be provided by the department.

Admission standards are the same as for the Master of Science in Gerontology.

Transfer Credits

An admission credit evaluation is prepared for graduate students with previous graduate level course work. This review indicates which courses the university will approve but it is the relevant school (Gerontology, Business, or Public Policy) that determines if any of these courses are appropriate for this degree. A maximum of 4 units may be used toward the master's degree.

Graduate transfer credit will not be granted for life experience, credit by examination, non-credit extension courses, correspondence courses or thesis supervision. Graduate transfer credit will not be granted for any course work taken elsewhere after the student has been admitted and enrolled at USC unless the student receives prior written approval from the department.

REQUIRED COURSES (24 UNITS)		UNITS
ACCT 509	Concepts of Financial and Management Accounting	4
FBE 587	Legal and Regulatory Environment of Long Term Care	4
GERO 500	Perspectives on a Changing Society: An Introduction to Aging	4
GERO 508	The Mind and Body Connection through the Lifespan, or	
GERO 522	Counseling Older Adults and Their Families	4
PPD 601	Management of Long-Term Care Organizations	4
PPD 649	Concepts and Practices in Public Personnel Administration	4

Students must select one course (for a total of 28 units) from the following courses.

ELECTIVE COURSE (4 UNITS)		UNITS
GERO 520	Life Span Developmental Psychology	4
GERO 530	Life Span Developmental Sociology	4
GERO 540	Social Policy and Aging	4
GERO 589	Case Studies in Leadership and Change Management	4

Pharm.D./Graduate Certificate in Gerontology

This integrated program in pharmacy and gerontology prepares students with an interest in geriatric pharmacy to assume leadership roles at academic, administrative or policy levels within the profession.

The program involves the completion of 16 units of core courses in physiology, psychology, sociology and social policy aspects of aging offered by the School of Gerontology. In addition, students are required to complete 8 units of approved elective courses in gerontology or geriatric pharmacy to be credited toward the requirements for the Pharm.D. and the Graduate Certificate in Gerontology.

REQUIRED COURSES IN GERONTOLOGY		UNITS
GERO 508	The Mind and Body Connection through the Lifespan, or	
GERO 510	Physiology of Development and Aging	4
GERO 520	Life Span Developmental Psychology, or	
GERO 522	Counseling Older Adults and Their Families	4
GERO 530	Life Span Developmental Sociology, or	
GERO 585	The Aging Family	4
GERO 540	Social Policy and Aging	4
		16

ELECTIVES IN GERONTOLOGY AND GERIATRIC PHARMACY (8 UNITS)		UNITS
GERO 554	Evaluation: Incorporating Evidence-Based Practices	4
GERO 555	Integrating Gerontology: A Multidisciplinary Approach	4
PHRD 655	Geriatric Pharmacy I	3
PHRD 656	Geriatric Pharmacy II	3
PHRD 703	Long Term Care Clerkship	6

PHRD 706	Geriatrics Clerkship	6
PHRD 730	Acute Care Geriatrics Clerkship	6
PHRD 731	Advanced Geriatrics Clerkship	6

It is expected that the program can be successfully completed by candidates taking electives in geriatric pharmacy or gerontology during the regular semester and completing one core course in gerontology during each summer in the four year Pharm.D. program.

Admission Requirements

Students who have a baccalaureate degree from an accredited college or university must submit separate applications to the USC School of Pharmacy and the USC Davis School of Gerontology. All requirements for admission to the regular Pharm.D. program must be fulfilled by the candidate. GRE scores are not required for admission to the certificate program.

Dual Degree Programs

The USC Davis School of Gerontology cooperates with six other professional schools at USC in offering programs in which the student receives two master's degrees. These degrees provide the student with the knowledge and skills of gerontology as well as those of the other professional field. The dual degrees require more course work than the M.S. alone, but offer the graduate greater breadth of education and employment options.

Dual degrees currently available are the Master of Science in Gerontology and the Master of Business Administration (M.S./MBA) with the Marshall School of Business; the Master of Science in Gerontology and the Juris Doctor (M.S./J.D.) with the Gould School of Law; the Master of Science in Gerontology and the Master of Public Administration (M.S./MPA), the Master of Science in Gerontology and the Master of Health Administration (M.S./MHA), and the Master of Science in Gerontology and the Master of Planning (M.S./MPI) with the Price School of Public Policy; the Master of Science in Gerontology and the Master of Social Work (M.S./MSW) with the School of Social Work; and the Master of Science in Gerontology and the Doctor of Pharmacy (M.S./Pharm.D.) with the School of Pharmacy. Students must apply to both schools simultaneously and, if accepted to both, participate in specially designed programs combining the courses of each school.

Admission to Dual Degree Programs

Applicants to any of the dual degree programs must submit two application forms to the Office of Admissions; one indicating gerontology as the major and one indicating the other degree as the major. Each of the schools must accept the student for admission. Acceptance into one school's degree program does not imply acceptance into the dual degree program.

Gerontology and Business Administration

The M.S./MBA dual degree combines knowledge of the older population with the skills of business management. The program prepares graduates for a number of roles in both public and private sector organizations including the marketing of products or services to seniors, human resource development with older workers and retirement benefits.

Gerontology Requirements

The Master of Science in Gerontology requires 30 units of course and fieldwork which covers the core content of the M.S. program.

REQUIRED COURSES		UNITS
GERO 510	Physiology of Development and Aging	4
GERO 520	Life Span Developmental Psychology	4
GERO 530	Life Span Developmental Sociology	4
GERO 540	Social Policy and Aging	4
GERO 555	Integrating Gerontology: A Multidisciplinary Approach	4
GERO 591	Field Practicum	4
Gerontology electives		6
		<hr/> 30

Business Administration Requirements

The Master of Business Administration will require 48 units of credit. Required courses include: all required courses in an MBA program; MOR 548 Competitive Advantage Through People (3); one marketing elective chosen from among MKT 512 Marketing and Consumer Research, MKT 525 Consumer Behavior and MKT 560 Marketing Strategy and Policy (3); and additional graduate business electives sufficient to bring the total units completed in the Marshall School of Business to at least 48. Dual degree students may not count courses taken outside the School of Business toward the 48 units.

Program Adaptation

The USC Davis School of Gerontology will waive 18 units of electives, plus GERO 593 Research Methods (4 units) and GERO 589 Case Studies in Leadership and Change Management (4 units), which are required in the regular M.S. program. Students will be exposed to research and professional issues in business administration course work.

Gerontology and Pharmacy

The emerging impact of the elderly on the health care system has created a need for health care providers who understand the unique needs of the elderly. As drug therapy remains the primary therapeutic option for chronic disease, the demand for prescription drugs will continue to rise. There is a demand for pharmacists who are equipped to meet the pharmaceutical care needs of this population. Geriatric pharmacy is recognized as a specialty, with board certification through the Commission for Certification in Geriatric Pharmacy. The Pharm.D./M.S., Gerontology program will provide extensive education and training in the unique health care needs of older adults. It will allow student pharmacists with a career interest in geriatrics or gerontology to work with health care planning or delivery organizations to develop and implement progressive pharmaceutical care programs for the elderly.

Application and Admissions Requirements

Students who intend to pursue the dual Pharm.D./MSG degree must be accepted by both programs. This includes having completed a baccalaureate degree from an accredited college or university with a minimum G.P.A. of 3.0 and a minimum equivalent GRE score of

1000. Students will not be given special consideration for admission to either program because they are applying for the dual degree. Students may apply to the dual Pharm.D./M.S. degree program in two ways. First, they may apply at the time they submit their Pharm.D. application by concurrently submitting applications to both programs. Students, who elect this approach, must identify themselves on both applications as potential dual degree students. Students who are admitted to both programs will be offered admission to the Pharm.D. and will be offered admission to the dual degree program. Second, students can apply to the dual degree by submitting an application to the M.S. in Gerontology program during their first year of enrollment in the Pharm.D. prior to the M.S., Gerontology published application deadline. Students, who elect this approach, must apply through the School of Pharmacy. Students admitted to the M.S. program using this approach will be offered admission to the dual degree contingent on passing all courses in their first year of the Pharm.D. with a minimum 3.0 G.P.A. Students accepted to the dual degree program must maintain a minimum 3.0 G.P.A. in their gerontology and Pharm.D. courses.

Graduation Requirements

Students must complete all requirements for the Pharm.D. and M.S. degrees as listed in the catalogue with a minimum cumulative 3.0 G.P.A. Students must complete 32 Gerontology units as indicated. The Pharm.D. degree course requirements are listed in the School of Pharmacy section on page 856xx.

GERONTOLOGY REQUIREMENTS		UNITS
GERO 520	Life Span Developmental Psychology	4
GERO 530	Life Span Developmental Sociology	4
GERO 540	Social Policy and Aging	4
GERO 555	Integrating Gerontology: A Multidisciplinary Approach	4
Gerontology electives*		16
		<hr/> 32

*Choose four of the following: GERO 522, GERO 543, GERO 550 or GERO 554.

Gerontology and Public Administration

The M.S./MPA dual degree offers the student interested in management of agencies and institutions the opportunity to gain in-depth knowledge of the administrative and organizational processes and management skills necessary for the effective delivery of services to older persons. See the Price School of Public Policy, page 900xx, for course requirements.

Gerontology and Health Administration

Students can specialize in health care administration (profit and non-profit) through the dual degree with the Price School of Public Policy's Health Administration Program. See the Price School of Public Policy, page 901xx, for course requirements.

Gerontology and Planning

The M.S./MPI dual degree is one of few in the nation which combines the knowledge of the older population with the skills needed to plan services for older people. The MPI prepares the graduate for the responsibilities

involved in development of public and private institutions and programs. The M.S. indicates a special focus on the older person and the skills to analyze and design programs for this growing population. See the Price School of Public Policy, page 896xx, for course requirement.

Gerontology and Law

The M.S./J.D. dual degree combines the knowledge of the older population with understanding of the legal system. The program prepares graduates for a number of roles in both public and private sector organizations. Students are required to complete 110 units of course work, 74 from the Gould School of Law and 36 from the Davis School of Gerontology. The first year is devoted to required law courses, and the second, third and fourth years combine gerontology and law courses. To earn the J.D., all students (including dual degree students) must complete 35 numerically graded law units at USC after the first year. The associate dean may make exceptions to the rule for students enrolled in the law school honors program. See the Gould School of Law, page 739xx, for course requirements.

Gerontology and Social Work

The M.S./MSW dual degree offers the student interested in direct service or community organization the credentials most valued in clinical and therapeutic practice. Taken in connection with the social work degree, the M.S. focuses course and fieldwork on the older person and prepares the student for social work with older persons and their families.

In the M.S./MSW dual degree program, the student enrolls primarily in the first year program of the USC School of Social Work. During the summer session, courses are taken in the USC Davis School of Gerontology. Second year courses are taken in both schools and fieldwork during the second year is taken in the School of Gerontology. The research course is taken through the School of Social Work in the student's concentration area. The School of Gerontology will waive GERO 589 Case Studies in Leadership and Change Management (4 units) and GERO 555 Integrating Gerontology: A Multidisciplinary Approach (4 units) because students enrolled in this program have a primary professional focus on social work.

GERONTOLOGY REQUIREMENTS		UNITS
GERO 510	Physiology of Development and Aging	4
GERO 520	Life Span Developmental Psychology	4
GERO 530	Life Span Developmental Sociology	4
GERO 540	Social Policy and Aging	4
GERO 591	Field Practicum	8
Gerontology electives		8
		<hr/> 32

SOCIAL WORK REQUIREMENTS		UNITS
SOWK 503	Human Behavior and the Social Environment I	3
SOWK 505	Human Behavior and the Social Environment II	3
SOWK 534	Policy and Practice in Social Service Organizations	3

SOWK 543	Social Work Practice with Individuals	4
SOWK 545	Social Work Practice with Families, Groups and Complex Cases	2
SOWK 562	Social Work Research	3
SOWK 586ab	Field Practicum	3-3
SOWK 587ab	Integrative Learning for Social Work Practice	2-2
SOWK 611	Leadership in the Social Work Profession and Organizations: Theory and Practice	3
		31

In the second half of the social work program, students may enroll in one of four concentrations: Health; World of Work; Mental Health; or Community Organization, Planning and Administration (COPA). All students are required to take SOWK 611 Leadership in the Social Work Profession and Organizations: Theory and Practice. Required courses are selected based on the chosen concentration as follows:

HEALTH		UNITS
SOWK 631	Advanced Theories and Clinical Interventions in Health Care	3
SOWK 632	Program Planning and Evaluation in Health Care	3
SOWK 636	Policy in the Health Care Sector	3

WORLD OF WORK		UNITS
SOWK 671	Micro Practice and Evaluation in Work-Related Environments	3
SOWK 672	Context and Policies of Social Work Practice in Work Environments	3
SOWK 673	Macro Practice and Evaluation in Work-Related Environments	3

MENTAL HEALTH		UNITS
SOWK 605	Human Development and Mental Health	3
SOWK 625	Evaluation of Research: Mental Health	3
SOWK 645	Clinical Practice in Mental Health Settings	3

COMMUNITY ORGANIZATION, PLANNING, AND ADMINISTRATION (COPA)		UNITS
SOWK 629	Evaluation of Research: Community Organization, Planning and Administration	3
SOWK 639	Social Policy for Managers, Planners, and Community Organizers	3
SOWK 648	Management for Community and Social Services	3

Course selection is done only with an academic adviser's approval.

Program Adaptations

The School of Gerontology waives 12 units. The research course is taken through the School of Social Work in the student's concentration area, and GERO 593, the

research course, and GERO 555 are waived as well as one elective. The School of Social Work waives 12 units.

Doctor of Philosophy in Gerontology

The purpose of the Ph.D. in Gerontology is to provide research training in the multidisciplinary field of aging. The program is designed to enhance the potential of able students to make scholarly and professional contributions to the field of gerontology through research and teaching. To obtain this goal, the Ph.D. in Gerontology provides (1) high level rigorous research training, (2) the acquisition and application of scientific knowledge in the field of aging and (3) the development of leadership skills.

Admission Requirements

Applicants for admission to the doctoral program must meet the following requirements:

(1) Recipient of a bachelor's degree from an accredited college or university by anticipated enrollment date.

(2) Academic promise, as evidenced by above average achievement in previous undergraduate and graduate education. A minimum GPA of 3.5 on all prior graduate work is required. In addition, a 3.25 GPA in an appropriate undergraduate major and a baccalaureate degree are required.

(3) Personal qualities compatible with high level performance in gerontology and indicating a potential for leadership in the field. This includes a strong commitment to developing a scientific research program. Applicants to the Ph.D. program must submit a resume of professional and academic experience, three letters of reference (academic and professional), a statement of objectives and examples of written work.

(4) Satisfactory performance on the Graduate Record Examinations — existing test scores may be submitted if the GRE has been completed no more than five years prior to the date of application. A satisfactory score on the Verbal and Quantitative GRE is required. Students should also provide scores from the Analytic exam.

(5) Submission of application materials as required. Instructions for application to the Doctor of Philosophy in Gerontology may be obtained by contacting the Davis School of Gerontology.

Degree Requirements

Course Requirements

Students must complete a minimum of 60 units of course work (with at least 24 of these units being completed in residency at USC), as well as additional dissertation units as required. All students will take courses in three areas:

(1) A basic scientific core area, taught by School of Gerontology faculty, will stress the physiological, psychological, sociological and theoretical dimensions of both individual and population aging. Five required courses include GERO 510 Physiology of Development and Aging, GERO 520 Life Span Developmental Psychology, GERO 530 Life Span Developmental Sociology, GERO 540 Social Policy and Aging, and GERO 628 Theories of Aging.

(2) A second core area will develop appropriate research tools for the students' area of specialization. All

students will learn data analysis skills, including appropriate statistics as well as appropriate laboratory methods. It should be noted that the School of Gerontology requires all graduate students to demonstrate basic competence in statistics as a prerequisite of enrollment.

(3) A third area will involve electives which allow students to concentrate in a substantive or analytic field of inquiry. Areas of concentration include but are not limited to: the biology of aging, social processes and aging, psychology of aging and aging policy; courses may be taken in relevant USC schools or departments. Aging is an inherently interdisciplinary field and each student must develop a set of electives in conjunction with his or her advisory committee that is appropriate for the area of concentration.

Students will be advised about course selection during the first year by the Ph.D. committee. As soon as they have selected a specialization (e.g., biology, psychology, sociology, policy), an advisory committee of appropriate faculty will be appointed. The purpose of the advisory committee is to help the student in the selection of courses and research; to monitor the student's progress; and to insure preparation for the qualifying examination.

During the first year, the student is expected to complete two of the three semesters of the core courses in gerontology (GERO 510, GERO 520, GERO 530, GERO 540, GERO 628). Courses in research skills and specialization areas may also be taken in the first year and will be taken in subsequent years.

Foreign Language Requirements

There are no foreign language requirements for the Ph.D. program.

Transfer Credits

Students with master's degrees or prior graduate course work in gerontology can petition to apply the credit toward required courses. Petition for credit will be based on the Graduate School's policies and requirements for "transfer of credit" and on approval by the doctoral advisory committee. Transfer credits toward the Ph.D. requirements will be limited to 20 units and must be credits taken within 10 years of entering the program.

Time Limit

The normal time for completing the Ph.D. is four to five years (without a prior master's degree). The first two years will consist of required and elective courses. The third year will consist of electives, the Ph.D. qualifying exams and completion of the dissertation proposal. The final year(s) will involve the completion of the dissertation. The maximum time to complete all requirements for the Ph.D. degree is eight years from the first course at USC applied toward the degree.

Students who have completed an applicable master's degree at USC or elsewhere within five years of the proposed enrollment in the Ph.D. program must complete the Ph.D. in six years.

Screening Procedures

When students have completed a minimum of 16 but not more than 24 units of doctoral course work, the doctoral advisory committee assesses their performance through a screening process and makes a

decision regarding their ability to continue in the program. If the student is granted permission to continue, a guidance committee is established.

Qualifying Exam Committee

The qualifying exam committee is composed of five faculty members, at least three from the School of Gerontology and at least one who holds a primary appointment in another academic unit of the university. The function of the qualifying exam committee is to oversee the development of the student's academic progress through the qualifying examination, including the preliminary dissertation proposal.

Qualifying Examination

As a prerequisite for candidacy for the Ph.D., students must pass a qualifying examination, which is multidisciplinary and comprehensive in nature and that necessitates independent study beyond course requirements. Students must have completed at least 28 units of course work in the doctoral program with a GPA of at least 3.25 before attempting the qualifying exam. The exam is designed to test mastery of knowledge and scholarly skills and to test readiness to undertake independent research. If the student fails this exam, it may be repeated one time. When the exam is successfully completed, the student then must develop and have a dissertation proposal approved before the student is officially admitted to candidacy for the Ph.D. degree.

Doctoral Dissertation

Upon admission to candidacy, a dissertation committee is established which consists of three members of the faculty, some of whom may be from the guidance committee, one of whom must hold his or her primary appointment outside the School of Gerontology.

The dissertation committee has responsibility for providing guidance and consultation during the research process, approving the dissertation, conducting the final oral examination, and recommending the candidate for the Ph.D. degree. The doctoral dissertation should make an original contribution to the development of knowledge and theory in gerontology.

Final Oral Examination

Upon approval of the final draft of the dissertation by all members of the dissertation committee, the candidate must pass a final oral examination. Upon successful completion of this final examination, the committee recommends the candidate to the Graduate School for award of the Ph.D. degree.

Courses of Instruction

GERONTOLOGY (GERO)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

GERO 200 Gerontology: The Science of Adult Development (4, FaSp) Introduction to adult development through the lifespan; biological, psychological, and social processes; gerontology as a career for the future.

GERO 310 Physiology of Aging (4, Fa) Effects of normative aging processes on homeostatic mechanisms and how these changes relate to development of disorder and disease in later life. Lecture and discussion. *Prerequisite:* BISC 220L or BISC 221L.

GERO 320 Psychology of Adult Development (4, FaSp) How psychologists study thinking, memory, emotions, personality, and behavior, and how people change in these throughout adulthood to old age. *Recommended preparation:* PSYC 100.

GERO 330 Society and Adult Development (4, FaSp) How social relationships affect adults of different ages; the changing contract across generations; interaction of culture, race, family and social values with adult development.

GERO 340 Policy, Values, and Power in an Aging Society (4, FaSp) How Americans' political values affect public policy. Studies of landmark legislation to explore the social contract between generations and role of governments in social welfare.

GERO 350 Administrative Problems in Aging (2 or 4, Fa) Analysis of the skills, approaches and issues involved in the planning, development, and implementation of programs directed at meeting the needs of older persons.

GERO 380m Diversity in Aging (4) Exploring diversity in the older population and variability in the human aging process.

GERO 385 Transitions in Adulthood (2 or 4) An exploration of the critical issues and transitions in the adult years, including careers, relationships, parenthood, and major turning points for personal development.

GERO 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

GERO 402 Housing for the Elderly: Policy, Programs, and Design (2) An overview of housing policies, programs and design for the elderly, including analysis and evaluation of past, current and proposed government programs.

GERO 411L Physiology, Nutrition, and Aging (2 or 4) Explores nutritional needs and the physiological, psychological, and sociological relationships to nutrition. Laboratory experiments in assessment and evaluation.

GERO 412L Exercise and Aging: Principles and Programs (2 or 4) Physiological, psychological, and sociological aspects of exercise. Laboratory involvement in assessment and evaluation of fitness.

GERO 414 Neurobiology of Aging (4, Fa) Age-related changes in nervous system structure and function; relationship of brain changes to changes in cognitive function and perception; Alzheimer's and Parkinson's diseases. Lecture and discussion. *Prerequisite:* BISC 220L or BISC 221L.

GERO 415 Neuroaffective Disorders of Aging (4, Sp) Methods of studying, evaluating, and treating cognitive, psychiatric, and behavioral problems associated with medical conditions of old age.

GERO 416 Health Issues in Adulthood (4, Sp) Physiological, psychological, and social health problems of adults as they are impacted by health choices throughout life.

GERO 421 Managed Care for an Aging Society (4, FaSp) Examines key legislation, policies, practice, and outcomes of managed care and how population aging affects health care delivery.

GERO 423 Psychological Development through Autobiography (4) Introduction to autobiography as a source of individual psychological development, with emphasis on integration of cognitive, emotional, and decision processes.

GERO 435m Women and Aging: Psychological, Social and Political Implications (4, FaSpSm) Problems and resources of the middle-aged and older woman in a changing society; including discrimination, stereotypes, employment, social interaction, etc.

GERO 437 Social and Psychological Aspects of Death and Dying (2 or 4, FaSp) Introduction and critical survey of the current issues, concepts, and research of the social and psychological aspects of death and dying.

GERO 440 Biodemography of Aging (4) Consideration of the biological and social-cultural factors that govern the evolution of life spans and the life of humans and selected animal models. *Prerequisite:* BISC 112 or BISC 113 or BISC 120 or BISC 121; *recommended preparation:* statistics.

GERO 451 Policy and Program Development in Aging (4) Policy trends and changing roles of local, state, and federal agencies in planning, managing, and evaluating programs in comprehensive, coordinated systems of service for older persons.

GERO 452 Economic Issues and the Aged (2 or 4) Analysis of economic factors associated with the aged; implications for individuals, society, and the economy; lifecycle economics, retirement, income maintenance, and social security.

GERO 461 Seminar in Molecular and Computational Biology (2, FaSpSm) (Enroll in BISC 461)

GERO 470 Aging and Business (4, Fa) An introduction to the dynamic roles of business in an aging society focusing on workplace issues, marketing to mature consumers, and careers for business gerontologists.

GERO 475 Ethical Issues in Geriatric Health Care (4) Biomedical ethical issues that are encountered in working with geriatric patients. Examination of ethical theory and the application of theory to clinical settings.

GERO 481 Case Management for Older Adults (4, Fa) Overview of the concepts, characteristics, skills, and clinical issues of case management in a variety of settings serving older persons.

GERO 483 Global Health and Aging (4, Fa) Overview of the impact aging populations will have on global institutions from a variety of perspectives. Examination of public health policy issues.

GERO 490x Directed Research (1-8, max 12) Individual research and readings. Not available for graduate credit.

GERO 491 Practicum (2-8, max 8, FaSpSm) Supervised experience in one or more community agencies. Graded CR/NC.

GERO 492 Senior Seminar (4, Sp) An in-depth integration of major research and professional themes in the study of human development and aging.

GERO 495 Practicum in Geriatric Care (4, FaSpSm) Supervised experience in a geriatric health care setting which allows students to put theories and ideas into practice. Graded CR/NC. Lecture, discussion, and fieldwork.

GERO 496 Introduction to Clinical Geriatrics (4) Medical problems of older adults emphasizing common geriatric syndromes, chronic illness, and alternative approaches to primary health care of older persons and their families. Upper division standing. *Prerequisite:* BISC 220L or BISC 221L.

GERO 497abc Honors Seminar (2, 2-4, FaSpSm) Advanced study of empirical approaches in gerontology. Preparation, progress, presentation, and evaluation of Senior Honors Thesis research. *Prerequisite:* standing in Gerontology Honors Program.

GERO 498 Nutrition, Genes, Longevity and Diseases (4, Sm) Examines the role of nutrition and genes and the impact each has on longevity and diseases, particularly diseases related to aging. Offered in Genoa, Italy.

GERO 499 Special Topics (2-4, max 8, FaSpSm) Examination of special topics in the area of gerontology.

GERO 500 Perspectives on a Changing Society: An Introduction to Aging (4, Fa) Analysis of physical, mental, and social age-related changes as well as implications of population aging trends for individuals and society.

GERO 501 Applied Legal and Regulatory Issues in Aging (4, Fa) Analysis of shifting legal and regulatory issues affecting the delivery of aging services.

GERO 502 Marketing and Shifts in Consumer Decision Making (4, Fa) Branding, marketing, and consumer behavior through examination of established, transitioning and emerging aging services and organizations.

GERO 504 Current Issues in Aging Services Management (4, Sp) Basic skills needed for an executive working in an aging services environment. Recommended for entry level administrators and managers.

GERO 505 Behavioral and Social Consequences of Design and Environment (4, Fa) Examination of the behavioral and social consequences of design and the environment to create a more satisfying physical environment for both frail and active older adults.

GERO 506 Technological Innovations in Aging (Gerontechnology) (4, Sp) Reflections on shifts in preferences for aging in place and the market ramifications of innovations in science and technology on older consumers and service providers.

GERO 507 End of Life Care (4, Sp) Examination of programs related to end of life care. Cultural competencies in working with a diverse population on end of life issues.

GERO 508 The Mind and Body Connection through the Lifespan (4, FaSpSm) An introduction to mind-body processes involved in healthy aging. Examines the interplay of emotions, beliefs, and behaviors in shaping health-relevant biological processes.

GERO 510 Physiology of Development and Aging (4, Sp) Examination of lifespan physiology of human development, growth, and aging; major emphasis in the physiology of the later years and implications for health maintenance.

GERO 519 Recent Advances in Neurobiology and Endocrinology of Aging (2 or 4) Theories of the biology of aging and the effects of age on functional integrity of the total organism.

GERO 520 Life Span Developmental Psychology (2 or 4, FaSm) Behavior from adulthood to old age; study of major components of behavior such as perception, cognitive processes, personality, intergenerational relationships, sexuality, and life styles.

GERO 522 Counseling Older Adults and Their Families (2 or 4, Sp) Theory and application of assessment and intervention techniques with older adults and their families. Topics include: treatment modalities, psychopathology, ethical and legal issues, brain disorders.

GERO 529 Seminar in Psychological Aspects of Aging (2 or 4) Psychological changes in the later years; perception; sensory factors; intelligence and memory; psychophysiological measures; personality; psychopathology.

GERO 530 Life Span Developmental Sociology (4, Sp) Life span perspective on the sociological theories of marriage and the family, inter-generational relationships, work and retirement, and other forms of social organization.

GERO 540 Social Policy and Aging (4, Fa) Major legislation and programs; examination and analysis of policy-making and political processes affecting development and implementation of programs for older persons.

GERO 541 Health Care Delivery Models: Comparative Approaches (4) Examination of current trends and future prospects of finance and reimbursement systems. Topics include major legislation and programs such as Medicare and Medicaid.

GERO 543 Continuum of Care: Systems Perspective (4) Structural and organizational aspects of institutional and community programs; public policies, fiscal management, regulation, administration; obstacles to inter-agency coordination; the continuum of care.

GERO 550 Administration and System Management in Programs for Older Adults (4, Sp) Application of theories of administration and system management to public and volunteer programs and services for older adults including residential institutions and community programs.

GERO 551 Applied Policy Skills in Aging (4, Sp) An overview and application of techniques and approaches used in the definition and analysis of policy problems in aging. *Prerequisite:* GERO 540.

GERO 554 Evaluation: Incorporating Evidence-Based Practices (4, Sp) Examination of the evaluation of health and service delivery in aging services industries.

GERO 555 Integrating Gerontology: A Multidisciplinary Approach (4, Sp) Aging (commonalities and distinctions) as addressed by biologists, psychologists, and sociologists. Topics include research perspectives, normative aging, functional decline and disability, and aging and society.

GERO 556 Program Development (2 or 4) Principles and procedures of assessing needs, collecting resources, designing activities, and implementing programs for older people in a variety of community and institutional settings.

GERO 560 Complementary Medicine for Health and Longevity (4, Sp) Alternative healing practices and complementary medicine including Eastern medicine, herbal therapies, vitamin and dietary supplements for general health and specific issues in aging. Open to graduate students or undergraduate students with senior standing for undergraduate credit. *Recommended preparation:* GERO 500.

GERO 570 Corporate Policies and Aging (4) An introduction to the evolving roles of corporations in an aging society including such topics as retaining older workers, retiree benefits, and the mature consumer.

GERO 585 The Aging Family (2 or 4, Sm) Family processes and structure in families with aged persons will be reviewed, including marital and family therapy and intervention strategies.

GERO 589 Case Studies in Leadership and Change Management (4, Fa) Examination of case studies of issues affecting the aging services industries and the role industry leaders play in reacting to change.

GERO 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

GERO 591 Field Practicum (1-12, max 12, FaSpSm) Supervised experiential learning in one or more organizations that serve older adults; includes a regularly scheduled seminar. Graded CR/NC.

GERO 592 Multidisciplinary Research Seminar in Aging (2, max 8, FaSp) Multidisciplinary perspectives on current research in gerontology, including physiology, neurobiology, health and medicine, psychology, sociology, and public policy. Topics will change each semester.

GERO 593 Research Methods (4, Fa) An introduction to research methods and their application to gerontology including problem formation, research design, data collection, descriptive and analytic statistics, interpretation, and report preparation.

GERO 594abz Master's Thesis (2-2-0, FaSpSm) Credit on acceptance of thesis. Graded IP/CR/NC.

GERO 599 Special Topics (2-4, max 8, FaSpSm) Examination of special topics in the area of gerontological study.

GERO 610 The Aging Society (4, Sp) The interaction of demographic and economic processes, with emphasis on how the contemporary nature of these interactions influence public policy response to an aging population.

GERO 613 Health and Aging (4, Sp) Examination of changes in health related to age, changes in health in populations over time, and the key health issues facing older persons.

GERO 620 Psychology of Aging (4, Fa) Overview of topics in the psychology of aging. Includes research and theory bearing on cognitive, personality, adaptive, and social processes throughout the adult life span. Open only to doctoral students. *Recommended preparation:* undergraduate course work in psychology.

GERO 628 Theories of Aging (4) An examination of the nature and adequacy of existing explanations of aging. Focus will be on psychological, sociological, and biological paradigms, and on the epistemology of theory.

GERO 640 Data Analysis Strategies (4, FaSpSm) Hands-on experience in developing and testing hypotheses using various types of databases, data management and analysis strategies and written presentation of findings. *Recommended preparation:* GERO 593.

GERO 645 Politics and Policy Processes in an Aging Society (4, Fa) Dynamics of the policy-making process in the context of aging policy in the United States; focus on the political system and its social dynamics.

GERO 790 Research (1-12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

GERO 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC.

USC Independent Health Professions



The USC Division of Biokinesiology and Physical Therapy, ranked #1 by U.S. News & World Report's most recent ranking of physical therapy programs in 2012, recently established a new Pediatric Physical Therapy Residency program in conjunction with Children's Hospital of Los Angeles, becoming only the second such program on the West Coast. Jeremy Wong, first resident in the program, is already interacting with young patients.

The USC Division of Biokinesiology and Physical Therapy and the Division of Occupational Science and Occupational Therapy are administered by the Ostrow School of Dentistry of USC. Both of these divisions offer outstanding education at either the graduate or undergraduate level.

The Division of Biokinesiology and Physical Therapy was established in 1944. For those entering the physical therapy profession, the division offers the Doctor of Physical Therapy. For practicing physical therapists, the division offers a Master of Science. In addition, the division offers the nation's longest-standing Ph.D. degree program in Physical Therapy, now a Ph.D. in Biokinesiology. Experienced clinicians with a master's degree in physical therapy may be eligible for the Doctor of Physical Therapy in an Advanced Standing program. Clinicians specializing in a specific area of practice may enter the Clinical Residency Program. The division is headquartered on the Health Sciences Campus.

The Division of Occupational Science and Occupational Therapy opened in 1942 and is headquartered on the Health Sciences Campus. More than 50 percent of the recipients of the American Occupational Therapy Association's highest awards have been USC alumni. The division offers a professional degree program allowing students to earn a B.S. degree and, in one additional year, an M.A. in occupational therapy. These graduates are eligible to sit for The National Board for Certification in Occupational Therapy. The division offers three degrees: the Master of Arts, the world's first Ph.D. in Occupational Science and the professional Occupational Therapy Doctorate (OTD). The Division of Occupational Science and Occupational Therapy is fully accredited by the Accreditation Council for Occupational Therapy Education, 4720 Montgomery Lane, Bethesda, Maryland 20824-1220, (301) 652-2682.

Biokinesiology and Physical Therapy

Health Sciences Campus

Center for the Health Professions

1540 E. Alcazar Street, CHP 155

Los Angeles, CA 90089-9006

(323) 442-2900

FAX: (323) 442-1515

pt.usc.edu

Faculty

Associate Dean and Chair: James Gordon, Ed.D., P.T., FAPTA

Associate Chair: Cheryl Resnik, P.T., DPT

Professors: James Gordon, Ed.D., P.T., FAPTA; Carolee J. Winstein, Ph.D., P.T., FAPTA; Francisco Valero-Cuevas, Ph.D.

Professors (Clinical Scholars): Linda Fетters, Ph.D., P.T.; Kornelia Kulig, Ph.D., P.T., FAPTA; Robert F. Landel, DPT, OCS, CSCS, MTC, FAPTA;

Associate Professors: Lucinda L. Baker, Ph.D., P.T.; Nina S. Bradley, Ph.D., P.T.; Sandra Howell, Ph.D., P.T.; Christopher Powers, Ph.D., P.T., FAPTA; George J. Salem, Ph.D.; Nicolas Schweighofer, Ph.D.

Assistant Professor: Jason Kutch, Ph.D.

Associate Professors of Clinical Physical Therapy: Beth Fisher, Ph.D., P.T.; Cheryl Resnik, P.T., DPT; Katherine Sullivan, Ph.D., P.T.

Assistant Professors of Clinical Physical Therapy: Jesus Dominguez, Ph.D., P.T.; Jacquelyn Dylla, P.T., DPT; Rose Hamm, DPT, CWS; Yogi Matharu, DPT, OCS; Michael O'Donnell, P.T., DPT, OCS, FAAOMPT; Marisa Perdomo, P.T., DPT; Amy Pomrantz, P.T., DPT, OCS, ATC; E. Todd Schroeder, Ph.D.; Susan Sigward, Ph.D., P.T., ATC; Michael Simpson, D.P.T.; Julie Tilson, P.T., DPT, NCS; Kimiko Yamada Heng, DPT, ATC, CSCS

Assistant Professors of Research Physical Therapy: Steven Cen, Ph.D., Christina Dieli-Conwright, Ph.D.

Instructors of Clinical Physical Therapy: Andrea Austin, P.T., DPT; Geoffrey Cariker, P.T., DPT; Aimee Diaz, P.T., SCS, ATC; Wilfred Diaz, P.T., DPT, OCS; Lori Ginoza, P.T., DPT, NCS; Julie A. Guthrie, P.T., DPT, OCS; Erin Hayden, P.T., DPT, OCS; Cole Hughlett, P.T., DPT; Nicole Irizarry, P.T., DPT; Sean Johnson, DPT, OCS; Yasuyuki Kasayama, DPT, OCS; Daniel Kirages, P.T., DPT, OCS, FAAOMPT; Cherise Lathan, P.T., DPT; Clarisa Martinez, DPT; David Richards, P.T., DPT; Jeffrey Rodrigues, P.T., DPT, CCS; Scott Russell, P.T., DPT; Erica Sigman, DPT, OCS; Jonathan Sum, P.T., DPT, OCS, CSCS

Adjunct Associate Professors: Joseph Godges, DPT; Ning Lan, Ph.D.; Stephen Reischl, P.T., DPT, OCS; Rizkalla Zakhary, Ph.D.

Adjunct Assistant Professors of Clinical Physical Therapy: Mike Andersen, P.T., DPT; Kyle F. Baldwin, P.T., DPT; Julia Burlette Itamura, P.T., DPT, OCS; Lily Cabellon, M.D.; Jason Cozby, DPT, OCS; Sharon DeMuth, P.T., DPT; Daniel Farwell, DPT; Sean Flanagan, Ph.D., ATC, CSCS; Robert Grego, Ph.D.; Larry Ho, P.T., DPT, OCS; Sally Ho, P.T., DPT, OCS; Robbin Howard, P.T., DPT, NCS; John Jankoski, MPT, NCS, OCS; Susan Layfield, P.T., DPT, M.S., OCS; Covey Lazoras, DPT, NCS; Rebecca Lewthwaite, Ph.D.; Ndidiamaka Matthews, P.T., DPT, NCS; John Meyer, P.T., DPT, OCS; Elizabeth Poppert, P.T., DPT, M.S., OCS; Gary Souza, P.T., DPT, OCS

Adjunct Instructors of Clinical Physical Therapy: Ginelle Amormino, P.T., DPT; Liz Bottrell, P.T., DPT; Julie Hershberg, P.T., DPT, NCS; Lauren Raquel Leporini, DPT; Mils Limcay, P.T., DPT, OCS; James Liston, M.Ed., CSCS; Jill Masutomi, P.T., DPT, PCS; Claire McLean, DPT, NCS; Lisa Meyer, P.T., DPT; Lisa Nocetti-DeWit, P.T., DPT, ATC; Cassandra Sanders-Holly, P.T., DPT; Claire Smith, P.T., DPT; Katie Weimer, P.T., DPT; Rami Weinberg, DPT, CSCS, OCS; Noriko Yamaguchi, P.T., DPT, CSCS; Maria Zibell, P.T., MPT

Emeritus Professors: Helen J. Hislop, Ph.D., Sc.D., FAPTA; Jacquelin Perry, M.D. (Orthopedics)

Emeritus Associate Professor: Lenore M. Krusell, M.A., P.T.

Programs

The Division of Biokinesiology and Physical Therapy offers multiple degrees, certificates and clinical residency programs allowing graduates the opportunity to choose educational programs that will expose them to cutting-edge research and scientific advancements, in turn creating innovators in the physical therapy profession. The largest degree program is the three-year Doctor of Physical Therapy (DPT), which is offered in addition to a post professional DPT, and a post professional DPT and Master of Public Health dual degree. The division also offers a Ph.D. in Biokinesiology, one of the nation's first Ph.D. degrees in physical therapy education, as well as a Ph.D. in Biokinesiology and Physical Therapy. The graduate curricula for the Master of Science and Doctor of Philosophy degrees are open to all qualified students who are or are not physical therapists.

Master of Science

Graduate study for the Master of Science in Biokinesiology is open to individuals who have a bachelor's degree and who have a strong interest in movement science.

Admission Requirements

Admission requirements include a superior grade point average in cumulative undergraduate and graduate course work (if applicable). Applicants should score at least 600 in each area of the Graduate Record Examinations. Applicants are to provide the department with three letters of recommendation. The faculty may

request a personal interview before making a decision on admission. Admission will be considered for the fall semester only. The application deadline is November 1. All applicants should contact the Division of Biokinesiology and Physical Therapy for advisement.

Prerequisites

The prerequisite for applicants to the Master of Science program in biokinesiology is either: (a) a bachelor's degree or higher with a science major or equivalent; or (b) a bachelor's or master's degree in physical therapy with appropriate basic science content. Courses completed at the time of application must include work (with appropriate laboratory study) in chemistry, physics, calculus and biology. Highly recommended is course work in anatomy, physiology, histology, kinesiology, trigonometry, neuroscience, analytical geometry, exercise physiology, biochemistry and computer programming. Applicants with no background in cellular or molecular biology may be required to take PT 509 in the entry-level DPT program. Candidates should have some degree of computer literacy. International applicants will be considered on a special evaluation of credentials.

Students deficient in certain prerequisites may be admitted subject to completion of requirements within two years after admission. An additional year may be granted upon review of the student's program by a faculty committee. Work in any prerequisite subjects will not be part of the required units for the Master of Science.

Degree Requirements

Completion of the degree requires satisfactory completion of a minimum of 32 credits of course work at the 500 level or above, a research project (BKN 559 and BKN 590), and a comprehensive examination administered with the chair of the Biokinesiology Committee acting as the examination adviser.

REQUIRED COURSES		UNITS
BKN 550	Neurobehavioral Basis of Movement	4
BKN 551	Musculoskeletal and Biomechanical Basis of Movement	4
BKN 552	Physiological Basis of Voluntary Movement	4
BKN 559	Readings in Biokinesiology	1-4, max 8
BKN 590	Directed Research	1-12
PM 510L	Principles of Biostatistics	4

Students must complete the three biokinesiology core courses (BKN 550, BKN 551, BKN 552) before sitting for their comprehensive examination. Substituting a course for one of the core courses may be allowed after receiving approval from the Biokinesiology Program Committee prior to the beginning of the course.

In order to fulfill the research project requirement, the following plan is suggested; however, each plan can

be individualized based on the needs of the student and/or adviser:

1. Select a research professor (from the department) whose work interests them. This should be done by the end of the first year of study.

2. After receiving the professor's approval, sign up for BKN 559 (4 units) and complete a semester reading the literature pertinent to the professor's work.

3. The following semester, sign up for BKN 590 (4 units) and participate in an ongoing research project that is being conducted by the professor. The research paper must be completed within the semester for which BKN 590 units are being given.

See the Doctor of Philosophy in Biokinesiology section, page 717xx, for a list of courses available to M.S. students.

Doctor of Physical Therapy

Post-professional Doctor of Physical Therapy Program

Applicants must be experienced physical therapy clinicians licensed to practice in the United States. Alternatively, foreign trained therapists must be graduates of institutions recognized by the American Physical Therapy Association. Applicants must also hold a master's degree in physical therapy or a field related to physical therapy practice. Generally, a minimum grade point average of 3.0 on a 4.0 scale as well as a minimum score of 500 on each of the three components of the Graduate Record Examinations are required. The degree requirement includes successful completion of 30–31 units as described in the following three sections:

REQUIRED COURSES		UNITS
PT 573	Physical Examination and Differential Diagnosis in Patients with Medical Disorders	2
PT 585	Physical Examination and Differential Diagnosis in Patients with Neurological Disorders, or	2
PT 624a	Neurological Differential Diagnosis and Therapeutic Interventions	3
PT 591	Physical Examination and Differential Diagnosis in Patients with Orthopedic Disorders	2
PT 605	Orthopedic Radiology	2
PT 607	Clinical Scanning	2
PT 608	Pharmacotherapeutics	2

ELECTIVES (A MINIMUM OF 9 UNITS IS REQUIRED, ONE FROM EACH CATEGORY IS RECOMMENDED) UNITS

<i>Anatomy</i>		
BKN 551	Musculoskeletal and Biomechanical Basis of Movement	4
BKN 563	Biomechanics	2
BKN 573ab	Advanced Dissection Anatomy	2
PT 514L	Musculoskeletal Anatomy	4
PT 534	Neuroanatomy	3
PT 554L	Analytical Anatomy	3

PT 622	Advanced Management of Spinal Disorders	3
PT 623	Advanced Management of Extremity Disorders	3
<i>Neurobiology</i>		
BKN 550	Neurobehavioral Basis of Movement	4
BKN 566	Neurobiology of Locomotion	2
BKN 578	Classic Readings in Biokinesiology	2
BKN 587ab	Physiological Correlates of Therapeutic Exercise	4-4
BKN 593	Behavioral Basis of Motor Control and Learning	3
PT 509	Cellular and Systems Physiology	3
PT 546	Neuropathology	3
PT 549L	Clinical Exercise Physiology	4
PT 569	Fundamentals of Neuroscience	4
PT 624bL	Neurological Differential Diagnosis and Therapeutic Interventions	3

Exercise Physiology

BKN 552	Physiological Basis of Voluntary Movement	4
BKN 587ab	Physiological Correlates of Therapeutic Exercise	4-4
BKN 588	Physiology and Biomechanics of Resistance Exercise	2
PT 509	Cellular and Systems Physiology	3
PT 549L	Clinical Exercise Physiology	4
PT 571L	Clinical Management of Cardiopulmonary Dysfunction	4
PT 622	Advanced Management of Spinal Disorders	3
PT 624bL	Neurological Differential Diagnosis and Therapeutic Interventions	3

Capstone Project (PT 592)

This required project provides the student with the opportunity to synthesize the learning experiences of the DPT program. It can take the form of a case study, a learning module for students or patients, a business plan for a unique form of health care delivery, or some other innovative concept. Work towards the completion of the project is done under the guidance of a single faculty member or a committee, depending on the magnitude and scope of the project. The primary faculty adviser will determine the unit value of the project.

A clinical residency is also available as part of the post-professional DPT program.

Certificate in Orthopedic Physical Therapy Certificate in Neurologic Physical Therapy Clinical Residency Programs

These programs are directed at practicing clinicians who seek post-professional clinical residency education in orthopedic or neurologic physical therapy and wish to obtain an academic credential for its completion.

Admission Requirements, Prerequisites and Degree Requirements

Admission requirements such as grade point average, GRE scores and P.T. licensure are the same as those for the post-professional DPT. In addition to the above listed requirements, experience in orthopedic physical therapy as evidenced by the years in practice and post-graduate course work taken will be assessed in the applicant's portfolio. The faculty may request a personal interview. Admission will be considered for fall semester only. Deadline for application is four months prior to the proposed starting date. All applicants should contact the Division of Biokinesiology and Physical Therapy for advisement. Completion of the certificate requires satisfactory completion of a minimum of 15 units.

REQUIRED COURSES FOR CERTIFICATE IN

ORTHOPEDIC PHYSICAL THERAPY		UNITS
PT 595abcd	Residency in Advanced Clinical Physical Therapy	1-4 each
PT 622	Advanced Management of Spinal Disorders	3
PT 623	Advanced Management of Extremity Disorders	3

REQUIRED COURSES FOR CERTIFICATE IN

NEUROLOGIC PHYSICAL THERAPY		UNITS
PT 595abcd	Residency in Advanced Clinical Physical Therapy	1-4 each
PT 624abL	Neurological Differential Diagnosis and Therapeutic Interventions	3-3

Doctor of Physical Therapy and Master of Public Health

The Post Professional Doctor of Physical Therapy (DPT) and the Master of Public (MPH) dual degree program offers the opportunity for physical therapy clinicians to pursue a doctoral-level education in combination with an integrated approach to health care. The program spans four years. Students begin the first one to two years completing MPH core and elective course work in the Department of Preventive Medicine. The remaining years are devoted to program requirements in physical therapy.

Professional Entry-level Doctor of Physical Therapy Program

This program comprises six semesters and two summer courses for completion of the required 115 units. Clinical experience (clerkship) is part of the curriculum during all three years. The Division of Biokinesiology and Physical Therapy awards the DPT to enrolled students who have satisfactorily completed the three-year curriculum. For successful completion, students must complete all course work with a minimum cumulative GPA of 2.75, meet all professional standards and pass all clinical clerkships.

Admission Requirements (Entry-level)

Applicants are required to complete the equivalent of a U.S. baccalaureate degree at an accredited college or university prior to matriculation. Prerequisite course work must include: four courses in the biological sciences (including human anatomy, human physiology and either cell or molecular biology); one year of college

physics; one year of college chemistry; one semester of college mathematics; two courses in psychology; one course in composition and writing; and one course in either literature or history. Human anatomy, human physiology, physics and chemistry must include laboratories. The following courses are highly recommended: biochemistry, calculus, kinesiology, exercise physiology, neuroscience, genetics and a cross-cultural course in sociology. Applicants should be computer literate.

Students from foreign countries must have completed one year of study in the United States prior to application. Credits from foreign institutions must be approved by the USC Office of Admission.

Graduate Record Examinations (GRE)

The GRE is required of all applicants. In general, minimum scores of 500 are required on each of the general test measures of verbal, quantitative and analytical ability.

Applications

Applications are available in September for the class entering in September of the following year. The deadline for receipt of applications is December 1 of each year. Only one class is admitted each year.

The Admissions Committee reviews all information submitted. Applicants may be requested to appear for a personal interview. It is highly recommended that all applicants make an appointment to visit the division's office located on the Health Sciences Campus and talk with students and members of the faculty.

Notice of Acceptance

Notice of acceptance will be sent to successful candidates no earlier than late January and continually thereafter until the class is filled. In no case will an acceptance be offered earlier than one year before anticipated enrollment.

Candidates should reply to an offer of acceptance within three weeks enclosing a \$1,000 deposit (non-refundable) which is credited to tuition at the time of registration. A letter of withdrawal is required if applicants wish to relinquish their place in the class; release is granted automatically upon receipt of the letter.

Degree Requirements (Entry-Level)

The DPT is awarded to enrolled students who have completed satisfactorily the three-year curriculum of 115 credits (depending on electives chosen). The minimum number of credits required for graduation is 115. The minimum GPA required for graduation is 2.75. Clinical experience (clerkship) is part of the curriculum during all three years.

The Division of Biokinesiology and Physical Therapy uses a system of student evaluation and grading that is designed to encourage self-reliance, to stimulate the student's independent quest for knowledge and to promote excellence in clinical and academic achievement.

Faculty of the program are responsible for establishing evaluation criteria appropriate to the objectives of each course and for specifying the manner in which evaluative information is to be gathered. For clinical evaluation, descriptive comments based on the student's performance are submitted by faculty and clinical instructors to the student's permanent file.

REQUIRED COURSES		UNITS
PT 509	Cellular and Systems Physiology	3
PT 514L	Musculoskeletal Anatomy	4
PT 516	Principles of Disease	2
PT 521L	Basics of Patient Management	4
PT 529	Life Span Motor Control	3
PT 530ab	Therapeutic Exercise	2-2
PT 534L	Neuroanatomy	3
PT 536	Pathology of Cardiopulmonary Disease and General Medical Conditions	3
PT 539	Clinical Pharmacology	1
PT 546	Neuropathology	3
PT 549L	Clinical Exercise Physiology	4
PT 551L	Therapeutic Application of Physical Agents	2
PT 554L	Analytical Anatomy	3
PT 561abcde	Evidence for Physical Therapist Practice	2-2-2-2-2
PT 566	Disorders of the Musculoskeletal System	3
PT 569	Fundamentals of Neuroscience	4
PT 571L	Clinical Management of Cardiopulmonary Dysfunction	4
PT 574	Clinical Biomechanics	3
PT 581L	Clinical Management of the Patient with Neurological Dysfunction	5
PT 582	Mechanics of Human Gait	2
PT 583L	Clinical Electrophysiology	3
PT 600abcdez	Clinical Clerkship	1-3-1-1-3-0
PT 606	Clinical Imaging	2
PT 621L	Clinical Management of the Patient with Musculoskeletal Dysfunction	5
PT 630	Integrated Management of the Upper and Lower Extremities	3
PT 631	Integrated Management of the Axial Skeletal System and Related Movement Disorders	3
PT 632	Integrated Patient Management Seminar	5
PT 650	Differential Diagnosis in Physical Therapy	2
PT 660	Advanced Clerkship with Academic Integration	5
PT 665	Advanced Clinical Clerkship	8

ELECTIVE COURSES		UNITS
PT 612L	Physical Therapy Management of Spinal Disorders	2
PT 613L	Physical Therapy Management of the Foot and Lower Quarter	2
PT 614L	Evaluation and Management for Hand Dysfunction	2
PT 615	Management of the Complicated Patient	2
PT 618L	Seminar in Advanced Neurological Rehabilitation	2
PT 619L	Clinical Electro-physiology	2

PT 654	Physical Therapy Interventions in Pediatrics	2
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Doctor of Philosophy in Biokinesiology

The graduate program leading to the Doctor of Philosophy in Biokinesiology is designed to prepare candidates for research and teaching at the university level. Actual programs of study will be designed with a degree of flexibility directed toward individual students who seek to become independent scholars.

Admission Requirements

Applicants must meet all general admission requirements of the university. Admission requirements include a superior grade point average in cumulative undergraduate and graduate course work (if applicable). In addition, applicants should score at least 600 in each area of the Graduate Record Examinations (GRE) and have some research experience. Students admitted for the Master of Science degree are not automatically admitted to the Doctor of Philosophy program. The Master of Science is not required as a prerequisite to the Ph.D. but may be advised.

Applicants must have a personal interview with the program faculty. A student can be considered for admission only when a member of the full-time Ph.D. faculty has agreed to serve as the student's Ph.D. adviser. Three letters of recommendation and duplicate transcripts must be sent to the division for preliminary evaluation, although final acceptance is based upon the official USC application procedure.

Prerequisites (Ph.D. Program)

The prerequisite for applicants to the Ph.D. program in biokinesiology is either: (a) a bachelor's degree or higher with a science major or equivalent; or (b) a bachelor's or master's degree in physical therapy with appropriate basic science content. Courses completed at the time of application must include work (with appropriate laboratory study) in chemistry, calculus, physics and biology. Highly recommended is course work in anatomy, physiology, histology, cell biology, exercise physiology, kinesiology, biochemistry, neuroscience, trigonometry, analytical geometry and computer programming.

Candidates should be computer literate. International applicants will be considered upon evaluation of credentials by the USC Office of Admission.

Students deficient in certain prerequisites may be admitted subject to completion of requirements within two years after admission. An additional year may be granted upon review of the student's program by a faculty committee. Work in any prerequisite subject will not be part of the required 60 units for the Doctor of Philosophy.

Screening Procedure

A screening procedure will be offered twice each year for qualified students. It must be taken prior to the completion of 24 units at the 500-level or higher. The purpose of the screening procedure is to assess the progress of the Ph.D. student and to determine whether that progress is sufficient to continue in the Ph.D. program. Passing the procedure is a prerequisite for continuation in the Ph.D. program.

Course Requirements

A minimum of 60 units is required for the Doctor of Philosophy degree.

REQUIRED COURSE WORK		UNITS
BKN 550	Neurobehavioral Basis of Movement	4
BKN 551	Musculoskeletal and Biomechanical Basis of Movement	4
BKN 552	Physiological Basis of Voluntary Movement	4
BKN 790	Research	1-12
BKN 794abcdz	Doctoral Dissertation	2-2-2-2-0
INTD 500*	Ethics and Accountability in Biomedical Research	1
PM 510L**	Principles of Biostatistics	4
PM 511aL**	Data Analysis	4

*Or equivalent graduate ethics course.

**Or equivalent graduate level statistics.

Ph.D. students must complete three core courses (BKN 550, BKN 551, BKN 552) before participating in the screening procedure. Substituting a course for one of the core courses may be allowed after receiving approval from the Biokinesiology Program Committee prior to the beginning of the course.

Other course requirements (to complete 60 units) will vary according to the specific needs of each student. Course work other than departmental offerings is encouraged and may be required by the student's qualifying exam committee.

COURSES AVAILABLE FOR M.S./PH.D. STUDENTS		UNITS
BKN 559	Readings in Biokinesiology	1-4, max 8
BKN 563	Biomechanics	2
BKN 566	Neurobiology of Locomotion	2
BKN 567	Advanced Topics in Biomechanics	2
BKN 573ab	Advanced Dissection Anatomy	2-2
BKN 575	Principles of Musculoskeletal Imaging	2
BKN 585	Systematic Research Writing	3
BKN 587ab	Physiological Correlates of Therapeutic Exercise	4-4
BKN 588	Physiology and Biomechanics of Resistance Exercise	4
BKN 590	Directed Research	1-12
BKN 593	Behavioral Basis of Motor Control and Learning	3
BKN 594abz	Master's Thesis	2-2-0
BKN 599	Special Topics	2-4, max 8
BKN 615	Principles of Skeletal Adaptation	4
BKN 617	Modeling the Motor System: An Introduction	2
BKN 618L	Modeling the Motor System: Laboratory	1
BKN 621	Electromyography in Research and Practice	3
BKN 623	Neuroplasticity and Neural Repair	3

BKN 672	Advanced Independent Study in Biokinesiology	1-4, max 8
BKN 790	Research	1-12
BKN 794abcdz	Doctoral Dissertation	2-2-2-2-0

Foreign Language Requirement

There is no foreign language requirement.

Qualifying Exam Committee

Upon successful completion of the screening examination the student and the major adviser will select a qualifying exam committee for continuing course work and independent study. The qualifying exam committee comprises five members: three to four full-time faculty from the Division of Biokinesiology and Physical Therapy, one whom serves as committee chair, and one or two faculty members outside the division.

The qualifying exam committee will recommend course work, independent study and readings in the major and cognate areas.

Qualifying Examination

The Ph.D. qualifying examination is offered during the fall or spring semesters. The qualifying examination concentrates on the student's ability to demonstrate knowledge in the major academic area chosen and its relation to other areas of study offered in the department. The qualifying examination has both written and oral components. A student failing any part of the examination may be allowed one additional opportunity to pass that portion at the discretion of the qualifying exam committee, within the regulations of the Graduate School governing the repetition of qualifying examinations.

Dissertation Committee

After the qualifying examination has been passed and a dissertation topic approved, the qualifying exam committee shall be known as the dissertation committee and may be reduced to three members upon unanimous recommendation to the dean of graduate studies. One of the three members must be from outside the major division. The chair of the dissertation committee will be the principal research adviser.

Dissertation and Oral Defense

An acceptable dissertation based on original investigation is required. The dissertation must show technical mastery of a special field, capacity for independent research and scholarly ability.

The dissertation and the defense or final oral must have the unanimous approval of the dissertation committee. The dissertation should be complete within three years of the date the proposal is approved.

Doctor of Philosophy in Biokinesiology and Physical Therapy

The graduate program leading to the Doctor of Philosophy in Biokinesiology and Physical Therapy offers an opportunity for highly qualified students to prepare for careers in academic health care. The curriculum is designed for individuals who envision a career that combines training for physical therapy practice and scholarly research.

Admission Requirements

Applicants must have earned a bachelor's degree with a superior grade point average as well as Graduate Record Examinations scores. A personal interview with program faculty is required. Prerequisite course work must include: four courses in the biological sciences with labs (including human anatomy, human physiology and cell or molecular biology); one year of college physics with lab; one year of college chemistry with lab; one semester of college mathematics; two courses in psychology; one course in composition and writing; one course in literature or history. Courses that are highly recommended include: biochemistry, calculus, kinesiology, exercise physiology, neuroscience, genetics and a cross-cultural course in sociology.

Application for admission to the Division of Biokinesiology and Physical Therapy requires submission of two sets of materials: special division application and university application forms. Students are admitted for study in the Ph.D. in Biokinesiology and Physical Therapy program beginning in the fall semester of each academic year. Both sets of applications must be submitted by December 1 of the previous year. At the time of admission to the program, the student must identify a faculty member who will serve as an adviser throughout every phase of study.

Degree Requirements

This degree is under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue (page 97xx) for general regulations.

YEARS 1, 2 - REQUIRED COURSES		UNITS
PM 510L	Principles of Biostatistics	4
PM 511aL	Data Analysis	4
PT 507	Professional Practice: Therapist Perspective	2
PT 509	Cellular and Systems Physiology	3
PT 514L	Musculoskeletal Anatomy	4
PT 516	Principles of Disease	2
PT 521L	Basics of Patient Management	4
PT 529	Life Span Motor Control	3
PT 534L	Neuroanatomy	3
PT 536	Pathology of Cardiopulmonary Disease and General Medical Conditions	3
PT 539	Clinical Pharmacology	1
PT 546	Neuropathology	3
PT 547	Professional Practice: System Perspective	2
PT 549L	Clinical Exercise Physiology	4
PT 551L	Therapeutic Applications of Physical Agents	2
PT 554L	Analytical Anatomy	3
PT 557	Professional Practice: Patient Perspective	2
PT 566	Disorders of the Musculoskeletal System	3
PT 569	Fundamentals of Neuroscience	4
PT 571L	Clinical Management of Cardiopulmonary Dysfunction	4
PT 574	Clinical Biomechanics	3

PT 581L	Clinical Management of the Patient with Neurological Dysfunction	5
PT 582	Mechanics of Human Gait	2
PT 583L	Clinical Electrophysiology	3
PT 600abcdez	Clinical Clerkship	1-3-1-1-3-0
PT 621L	Clinical Management of the Patient with Musculoskeletal Dysfunction	5

YEARS 3, 4, 5 — REQUIRED COURSES		UNITS
BKN 790	Research	1-12
BKN 794abcdz	Dissertation	2-2-2-2-0

YEAR 6 — REQUIRED COURSES		UNITS
PT 630	Integrated Management of the Upper and Lower Extremities	3
PT 631	Integrated Management of the Axial Skeletal System and Related Movement Disorders	3
PT 632	Integrated Patient Management Seminar	5
PT 660	Advanced Clerkship with Academic Integration	5
PT 665	Advanced Clinical Clerkship	8

A minimum of 116 units is required for completion of this program.

Estimated Calendar of Study

Basic and Clinical Science Foundation Courses (Years 1, 2)

The student will enroll in all required course work and clinical experiences *excluding* BKN 790, BKN 794abcdz, PT 630, PT 631, PT 632, PT 660, PT 665.

Qualifying Exam (Year 3)

The student will select a qualifying exam committee and begin preparing a research proposal (register for BKN 790). During this time, the student is encouraged to enroll in key elective courses, both inside and outside the division, which will enhance research proposal development. The expectation is that the student will sit for the qualifying exam and achieve doctoral candidacy at the end of year three.

Research and Dissertation Preparation (Years 4, 5)

The student will complete the research project and prepare a dissertation (register for BKN 790 and BKN 794). The expectation is that the student will successfully defend the dissertation by the end of year five.

Completion of Internship Requirement (Year 6)

The student will complete the required internships to achieve clinical competency (register for PT 630, PT 631, PT 632, PT 660 and PT 665).

Courses of Instruction

BIOKINESIOLOGY (BKN)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

BKN 504 Neuromuscular Systems (3, Fa) (Enroll in BME 504)

BKN 550 Neurobehavioral Basis of Movement (4, Sp) Introduction to the neurobehavioral and neurobiological basis of movement. Review of information processing, neural basis of perception/action, motor systems, and higher cognitive function and behavior. *Recommended preparation:* biology and physiology.

BKN 551 Musculoskeletal and Biomechanical Basis of Movement (4, Fa) Introduction to the mechanical properties of the musculoskeletal system. Review of connective tissue and muscle mechanics, arthrology, anatomical design and statics. Laboratory dissections illustrate biomechanical concepts.

BKN 552 Physiological Basis of Voluntary Movement (4, Sp) Consideration of the neuromuscular and musculoskeletal physiology of voluntary movement.

BKN 557L Functional Neuroanatomy with Lab Dissection (3, FaSpSm) Comprehensive survey of regional neuroanatomy covered in lecture and laboratory format with dissection. In-depth consideration is given to neuroanatomical basis of sensory and motor function. Topics include neuroanatomical basis of cellular function, somatosensation, special senses, movement and distributed motor control, and homeostasis regulation.

BKN 559 Readings in Biokinesiology (1-4, max 8, FaSpSm) Independent review and synthesis of papers appearing in the current literature.

BKN 563 Biomechanics (2, 2 years, Sp) Advanced study of the kinematics of human motion. Emphasis on the inverse dynamics solution to quantify forces and moments of force. Lecture and demonstration.

BKN 566 Neurobiology of Locomotion (2) Topics include developmental biology of embryonic motility, central pattern generators, descending neural regulation, sensory modulation, and perception/action influences on the motor control of locomotion. *Prerequisite:* BISC 524, BISC 525; *recommended preparation:* BKN 550.

BKN 567 Advanced Topics in Biomechanics (2, Sp) Advanced examination of motion-analysis techniques, applications and data interpretation. Magnetic tracking techniques, upper-extremity kinematics, energy/work/impulse concepts, intersegmental dynamics, and EMG muscle modeling are examined. *Prerequisite:* BKN 563.

BKN 573ab Advanced Dissection Anatomy (2-2, FaSpSm) Advanced analysis of systems or structures with dissection. Emphasis on correlations with function.

BKN 575 Principles of Musculoskeletal Imaging (2, Sm) Basic principles of musculoskeletal imaging as it relates to biomechanics research. Topics include MRI physics, variable imaging parameters and selection of pulse sequences.

BKN 578 Classic Readings in Biokinesiology (2) A seminar course in which students read and discuss classic scientific papers that have shaped the development of the movement sciences over the past 150 years.

BKN 585 Systematic Research Writing (3, Sm) Development of analytical journal reading skills and proficiency in scientific writing. Lecture and tutorial format.

BKN 587ab Physiological Correlates of Therapeutic Exercise (4-4, FaSp) *a:* Responses of the physically handicapped to exercise. Emphasis on muscle, energy metabolism, body temperature, environment, endocrine considerations. Strengthening, training, endurance, and evaluation of performance. *b:* Responses of the physically handicapped to exercise, with emphasis on cardiovascular and respiratory adaptations and pathology.

BKN 588 Physiology and Biomechanics of Resistance Exercise (2, Sp) Science of resistance-exercise prescription, adaptation, and outcome assessment. Topics include periodization, neuromuscular and connective-tissue adaptation, special populations, and biomechanical considerations.

BKN 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

BKN 593 Behavioral Basis of Motor Control and Learning (3, Fa) Seminar in movement science dealing with the behavioral basis of motor control and learning from an information processing perspective. *Recommended preparation:* statistics; psychology.

BKN 594abz Master's Thesis (2-2-0) Credit on acceptance of thesis. Graded IP/CR/NC.

BKN 599 Special Topics (2-4, max 8, FaSpSm) Studies of scientific theory in physical therapy.

BKN 615 Principles of Skeletal Adaptation (4, 2 years, Sm) Introduction to the integrative physiology of skeletal adaptation to mechanical loading. Emphasis on mechanical and chemical regulation of bone mass.

BKN 617 Modeling the Motor System: An Introduction (2, 2 years, Sp) Introduction of basic principles and models of the primate motor system. Emphasis on arm control.

BKN 618L Modeling the Motor System: Laboratory (1, 2 years, Sp) Introduction of computer programming and implementation of computational models in a laboratory setting.

BKN 621 Electromyography in Research and Practice (3, 2 years, Fa) Physiology and electrophysiology of muscular contraction, how it is collected, quantified and processed. Uses of electromyographic information for research and clinical assessments. *Recommended preparation:* human anatomy, skeletal muscle physiology.

BKN 623 Neuroplasticity and Neural Repair (3, 2 years, Fa) Integration of basic research on neuroplasticity and clinical research on central nervous system reorganization after brain injury. Implication for neuro-recovery and rehabilitation.

BKN 672 Advanced Independent Study in Biokinesiology (1-4, max 8, FaSpSm) Examination of selected mechanisms underlying normal movement and pathological movement. Ph.D. students only.

BKN 790 Research (1-12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

BKN 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC.

PHYSICAL THERAPY (PT)

PT 507 Professional Practice: Therapist Perspective (2, Fa) Identification of personal values, attitudes and beliefs and their relationship to personal development into a health care provider. Emphasis on communication skills, ethics, and professional guidelines, laws and regulations.

PT 509 Cellular and Systems Physiology (3, Fa) Selected subjects in cellular and systems physiology. Emphasis on molecular and cellular aspects of neuromuscular function; also renal and endocrine physiology.

PT 514L Musculoskeletal Anatomy (4, Fa) Musculoskeletal anatomy, innervation, blood supply, and function: intensive study of the head, neck, trunk, and limbs. Lecture, dissection laboratory.

PT 516 Principles of Disease (2, Fa) Principles and mechanisms of genetics, immunology, infection, wound healing, and oncology. Lecture.

PT 521L Basics of Patient Management (4, Fa) Development of basic decision-making skills, professional behaviors and impairment assessment in patients with musculoskeletal neurologic and/or cardiopulmonary dysfunction. Lecture, laboratory.

PT 529 Life Span Motor Control (3, Fa) Introduction to sensorimotor systems, overview of current perspectives in motor control from fetus through late adulthood, and clinical tests of motor proficiency. Lecture, limited laboratory.

PT 530ab Therapeutic Exercise (a: 2, Sp; b: 2, Sm)
a: Theoretical and practical principles for evaluation of exercise need and prescription of exercise programs. Emphasis on approaches for patients with musculoskeletal deficits. (Duplicates credit in former PT 530.)
b: Examination of needs analysis and prescription of exercise programs for special patient populations and assessment of current community trends in exercise and wellness.

PT 534L Neuroanatomy (3, Sm) Organized approach to structures in the brain, spinal cord and peripheral nervous systems that subserve motor, sensory, and integrative functions, memory, cognitive and special senses. Lecture, laboratory.

PT 536 Pathology of Cardiopulmonary Disease and General Medical Conditions (3, Fa) Pathology and pathophysiological mechanisms in disease of the cardiac, pulmonary and circulatory systems; examination of diabetes, burns, and other disabling medical disorders. Lecture. *Prerequisite:* PT 509, PT 514L, PT 516, PT 521L, PT 529.

PT 539 Clinical Pharmacology (1, Fa) Effects of commonly used drugs in patients with physical disability; side effects that alter physical performance or responses to exercise.

PT 546 Neuropathology (3, Sp) Pathology in the central and peripheral nervous systems that alter motor and sensory performance. Emphasis on loss of motion, excessive and involuntary movement disorders. Lecture. *Prerequisite:* PT 516, PT 534L.

PT 547 Professional Practice: System Perspective (2, Sm) Analysis of the integration of physical therapy practice into the national health care system; administration, budgeting and reimbursement for physical therapy services.

PT 549L Clinical Exercise Physiology (4, Fa) Adaptation of the human body to exercise and the use of exercise to modify human function. Lecture and laboratory.

PT 551L Therapeutic Application of Physical Agents (2, Sp) Physiologic responses to the application of thermal, mechanical, electromagnetic and hydrodynamic therapeutic procedures. Evaluation procedures and intervention planning. Lecture, laboratory. *Prerequisite:* PT 521L.

PT 554L Analytical Anatomy (3, Sp) Detailed kinesiology analysis of axial, spine, head, neck, face and bulbar muscles. Lecture, laboratory and clinical demonstration. *Prerequisite:* PT 514L.

PT 557 Professional Practice: Patient Perspective (2, Sp) Examination of issues related to professional-patient relationships, culture, lifestyles, ethnicity, gender and age. Emphasis on communication within a patient care model.

PT 561abcde Evidence for Physical Therapist Practice (2-2-2-2-2)
a: Introduction to a patient-centered Evidence Based Practice model with emphasis on professional communication skills, ethics, professional guidelines, laws and regulations; *b:* introduction to acquiring, appraising and integrating research evidence; *c:* advanced critical analysis and application of research of evidence; *d:* advanced integration of patient values as influenced by culture, ethnicity, lifestyles, gender, and age into patient-centered clinical decision making; *e:* analysis of the integration of physical therapist practice into the national health care system; administration, budgeting and reimbursement for physical therapist services.

PT 566 Disorders of the Musculoskeletal System (3, Sp) Regional description of pathology and pathophysiological mechanisms of disorders of bone, connective tissue, and joints. Lecture, demonstration.

PT 569 Fundamentals of Neuroscience (4, Sp) Detailed analysis of neurophysiologic mechanisms underlying normal and abnormal motor and sensory function. Lecture. *Prerequisite:* PT 509, PT 516, PT 529, PT 534L.

PT 571L Clinical Management of Cardiopulmonary Dysfunction (4, Fa) Physical therapy evaluation and intervention in the care of patients with circulatory, cardiac, or pulmonary dysfunction. Lecture, case presentations, laboratory. *Prerequisite:* PT 521L.

PT 573 Physical Examination and Differential Diagnosis in Patients with Medical Disorders (2, Fa) Physical assessment and differential diagnosis in common medical conditions. Emphasis on factors that influence physical therapy or require referral back to the physician.

PT 574 Clinical Biomechanics (3, Fa) Introduction to the principles of biomechanics (statics, dynamics) as they apply to physical therapy practice. Emphasis on tissue mechanics, joint function and gait. Lecture. *Prerequisite:* PT 554L.

PT 581L Clinical Management of the Patient with Neurological Dysfunction (5, Fa) Physical therapy theory and methods for intervention in neurological dysfunction. Lecture, laboratory. Neuroanatomy lab available. *Prerequisite:* PT 509, PT 516, PT 521L, PT 529, PT 534L.

PT 582 Mechanics of Human Gait (2, Sp) Introduction to both normal and pathological gait. Emphasis on the basic components of abnormal ambulation including temporal-spatial factors, joint motion, kinetics, kinematics, and muscle activity. Lecture.

PT 583L Clinical Electrophysiology (3, Sp) Use of electrical currents to evaluate and treat musculoskeletal, neurological and wound disorders. Theory and practice. Lecture, laboratory. *Prerequisite:* PT 514L, PT 554L.

PT 585 Physical Examination and Differential Diagnosis in Patients with Neurological Disorders (2, Fa) Physical examination and differential diagnosis in neurologic disorders. Emphasis on factors that influence physical therapy or require referral back to the physician.

PT 591 Physical Examination and Differential Diagnosis in Patients with Orthopedic Disorders (2, Sp) Physical examination and differential diagnosis in orthopedic disorders. Emphasis on factors that influence physical therapy or require referral back to the physician.

PT 592 Capstone Project (1-6, max 6, FaSpSm) Synthesis of knowledge gained in the pursuit of D.P.T. degree through a case study, a learning module for students or patients, a business plan for a unique form of health care delivery, or some other innovative concept. The primary faculty adviser will determine the unit value of the project.

PT 595abcd Residency in Advanced Clinical Physical Therapy (1-4 each, FaSpSm) Residency open to students pursuing a Graduate Certificate in Orthopedic Physical Therapy or Neurologic Physical Therapy or the post-professional D.P.T. program. Graded CR/NC. P.T. Licensure required.

PT 600abcdez Clinical Clerkship (1-3-1-1-3-0, FaSpSm) *a:* Practical experience in two- or six-week physical therapy manual skills, decision making and professional behaviors. *b:* Practical experience in six-week physical therapy manual skills, decision making, and professional behaviors. *c:* Practical experience in two-week physical therapy psychomotor skills, decision making and professional behaviors. *d:* Practical experience in two-week physical therapy psychomotor skills, decision making and professional behaviors. *e:* Practical experience in six-week physical therapy psychomotor skills, decision making and professional behaviors. Graded CR/NC.

PT 605 Orthopedic Radiology (2, Fa) Study of normal and pathologic skeletal radiographic examinations.

PT 606 Clinical Imaging (2, SpSm) Elements of reading roentgenographs, CAT and MRI scans for the physical therapist. Lecture, demonstration, practical experience. Open only to Biokinesiology and Physical Therapy graduate students.

PT 607 Clinical Scanning (2, Sp) Survey of diagnostic imaging for orthopedic and neurologic disorders seen in physical therapy practice.

PT 608 Pharmacotherapeutics (2, Fa) Indications, contraindications, physiologic mechanisms, and side-effects of pharmacologic agents. Analysis of interactions between drugs and physical therapy interventions.

PT 612L Physical Therapy Management of Spinal Disorders (2, FaSpSm) Advanced evaluation and treatment skills for the management of individuals with spinal disorders. Lecture, laboratory. *Prerequisite:* PT 600d.

PT 613L Physical Therapy Management of the Foot and Lower Quarter (2, Fa) Advanced evaluation and treatment skills for management of individuals with lower extremity disorders. Lecture, laboratory. *Prerequisite:* PT 600d.

PT 614L Evaluation and Management of Hand Dysfunction (2, Sp) Pathology, evaluation, differential diagnosis and treatment of hand and wrist dysfunction. Lecture, laboratory. *Prerequisite:* PT 600d.

PT 618L Seminar in Advanced Neurological Rehabilitation (2, Sp) Advanced evaluation treatment, and problem solving skills for the individual with neurological dysfunction. Lecture, laboratory. *Prerequisite:* PT 600d.

PT 619L Clinical Electrophysiology (2, Fa) Advanced evaluation and treatment of individuals with peripheral nerve disorders using electrotherapy. Lecture, laboratory. *Prerequisite:* PT 600d.

PT 621L Clinical Management of the Patient with Musculoskeletal Dysfunction (5, Sp) Physical therapy theory and methods of evaluation and treatment of orthopedic dysfunction. Lecture, demonstration, laboratory. Dissection lab available. *Prerequisite:* PT 514L, PT 521L.

PT 622 Advanced Management of Spinal Disorders (3, FaSpSm) Theoretical and practical foundations in orthopedic rehabilitation of spinal disorders with emphasis on differential diagnosis from systemic manifestation. Lecture, laboratory, and case presentations. Open to licensed physical therapists only.

PT 623 Advanced Management of Extremity Disorders (3, FaSpSm) Theoretical and practical foundations in orthopedic rehabilitation of occupational, recreational and athletic disorders of the extremities; emphasis on differential diagnosis from systemic manifestations. Lecture, laboratory, and case presentations. Open to licensed physical therapists only.

PT 624abL Neurological Differential Diagnosis and Therapeutic Interventions (3-3, FaSp) Theoretical and practical foundations of clinical practice for specialization in neurologic physical therapy. *a:* Principles of neurologic differential diagnosis, mechanisms of neuro-recovery and rehabilitation of focal neurologic disorders covered. *b:* Emphasis on advanced skills in neurologic differential diagnosis and rehabilitation for complex neurologic disorders.

PT 630 Integrated Management of the Upper and Lower Extremities (3, FaSp) Advanced evaluation and management of upper and lower extremity disorders and related movement dysfunction. *Prerequisite:* PT 600e.

PT 631 Integrated Patient Management of the Axial Skeletal System and Related Movement Disorders (3, FaSp) Advanced assessment and management of axial skeletal dysfunctions and related movement disorders. *Prerequisite:* PT 600e.

PT 632 Integrated Patient Management Seminar (5, FaSp) Integration of physical therapy management of complicated patients with concurrent musculoskeletal, cardiopulmonary and/or neurologic disorders. *Prerequisite:* PT 571L, PT 581L, PT 621L.

PT 642abc Evidence Based Practice (2-2-2, a: Sm, b: Fa, c: Sp) *a:* Practical considerations of evidence-based practice including patient interviews and search methods. *b:* Development of critical analysis skills of evidence to enhance critical thinking. *c:* Focus on evidence-based decision making using patient perspectives to effect optimal function outcomes.

PT 650 Differential Diagnosis in Physical Therapy (2, FaSpSm) Consideration of principle of differential diagnosis with emphasis on mastering this skill. Open only to Biokinesiology and Physical Therapy graduate students. *Recommended preparation:* completion of years 1 and 2.

PT 654 Physical Therapy Intervention in Pediatrics (2, Sm) Physical therapy management of commonly encountered pediatric diagnoses. Seminar, clinical laboratory. Open to students enrolled in physical therapy degree programs only.

PT 660 Advanced Clerkship with Academic Integration (5, FaSp) A 16-week clerkship consisting of a minimum of 24 hours per week in a part-time setting. Emphasis on the care of orthopedic, neurologic, pediatric or complicated medical conditions. Graded CR/NC. *Prerequisite:* PT 600e.

PT 665 Advanced Clinical Clerkship (8, FaSp) A 16-week clerkship consisting of a minimum of 36 hours per week in a full-time setting. Emphasis on care of orthopedic, neurologic, pediatric or complicated medical conditions. Graded CR/NC. *Prerequisite:* PT 600e.

Occupational Science and Occupational Therapy

Health Sciences Campus
Center for the Health Professions
1540 Alcazar St., CHP 133
Los Angeles, CA 90089-9003
(323) 442-2850
Toll Free: (866) 385-4250
FAX: (323) 442-1540
Email: otdept@usc.edu
ot.usc.edu

Faculty

Associate Dean and Chair: Florence A. Clark, Ph.D., OTR/L

Associate Chair: Ann Neville-Jan, Ph.D., OTR/L

Professors: Sharon Cermak, Ed.D.; Florence A. Clark, Ph.D., OTR/L; Gelya Frank, Ph.D.; Mary Lawlor, Sc.D., OTR/L; Cheryl Mattingly, Ph.D.; William Morgan, Ph.D.

Associate Professors: Ann Neville-Jan, Ph.D., OTR/L

Assistant Professors: Lisa Aziz-Zadeh, Ph.D.; Natalie Leland, Ph.D., OTR/L, BCG (*Gerontology*); Trudy Mallinson, Ph.D., OTR/L; Beth Pyatak, Ph.D., OTR/L; Shawn Roll, Ph.D., OTR/L, CWCE; Olga Solomon, Ph.D.; Barbara Thompson, Ph.D.

Professor of Clinical Occupational Therapy: Linda Fazio, Ph.D., OTR/L

Associate Professors of Clinical Occupational Therapy: Erna Blanche, Ph.D., OTR/L; Katie Jordan, OTD, OTR/L; Linda Liang, M.A., OTR/L; Julie McLaughlin Gray, Ph.D., OTR/L

Assistant Professors of Clinical Occupational Therapy: Sarah Bream, OTD, OTR/L; Carlin Daley, OTD, OTR/L; Ceslo Delgado Jr., OTD, OTR/L; Camille Dieterle, OTD, OTR/L; Michelle Farmer, OTD, OTR/L; Don Gordon, Ph.D., OTR/L; Ashley Halle, OTD, OTR/L; Karrie Kingsley, OTD, OTR/L; Michael McNulty, OTD, OTR/L; Jaynee Meyer, OTD, OTR/L; Helen Mirsaedi, OTD, OTR/L; Phoung Nguyen, OTD, OTR/L; Shannon O'Brien, OTD, OTR/L; Daniel Park, OTD, OTR/L; Joanne Park, OTD, OTR/L; Lindsay Price, OTD, OTR/L; Samia Rafeedie, OTD, OTR/L; Chantelle Rice, OTD, OTR/L; Shelby Surfas, OTD, OTR/L; Ashley Uyeshiro, OTD, OTR/L; Myka Winder, OTD, OTR/L

Instructors of Clinical Occupational Therapy: Aimee Aguilon, OTR/L; Mahjabeen Aftab, OTR/L; Catherine Crowley, OTD, OTR/L; Kim Eggleston, M.A., OTR/L; Kathleen Gross, M.A., OTR/L; Heather Kitching, M.A., OTR/L; Michelle Lee, OTD, OTR/L; Stephanie Mielke, OTD, OTR/L; Tessa Milman, OTD, OTR/L; Whitney Pike, B.S., OTR/L; Deborah Pitts, Ph.D., MBA, OTR/L; Lindsay Pugh, M.S., CCC-SLP; Janice Rocker, M.S., OTR/L; Joan Vartanian, B.S., OTR/L

Research Professor: Michael Carlson, Ph.D.

Research Adjunct Professor: Susan Lipton Garber, Ph.D.

Research Assistant Professors: Jesus Diaz, OTD, OTR/L; Cheryl Vigen, Ph.D.

Adjunct Assistant Professors of Clinical Occupational Therapy: Kiley Hanish, OTD, OTR/L; Susan McNulty, OTD, OTR/L; Bonnie Nakasuji, OTD, OTR/L, C/NDT; Clarissa Saunders-Newton, Ph.D., OTR/L; Susan Spitzer, Ph.D., OTR/L

Adjunct Instructors of Clinical Occupational Therapy: Susan Bowles, OTD, OTR/L; Cynthia Burt, M.A., OTR/L; Remy Chu, B.S., OTR/L; Lisa Deshaies, M.A., OTR/L; Heidi Dombish, M.S., OTR/L; Arlene Long, B.S., OTR/L; Karen Park, M.A.; Barbara Phillips, M.A., OTR/L; Tammy Richmond, M.A., OTR/L; Pamela Roberts, M.A., OTR/L; Joan Surfus, M.A., OTR/L; Ana Verran, M.A., OTR/L

Emeritus Professors: Elizabeth J. Yerxa, Ed.D.; Ruth Zemke, Ph.D.

Degrees Offered

The Division of Occupational Science and Occupational Therapy offers a Bachelor of Science in Occupational Therapy, a minor in Occupational Science, and a Master of Arts in Occupational Therapy. The Master of Arts in Occupational Therapy is offered for students continuing their education following their undergraduate degree in occupational therapy, for those whose first degree is in another field and also for certified occupational therapists seeking a post-professional degree. The division

also offers the Occupational Therapy Doctorate (OTD) and the Ph.D. in Occupational Science. The Division of Occupational Science and Occupational Therapy is fully accredited by the Accreditation Council for Occupational Therapy Education, 4720 Montgomery Lane, P.O. Box 31220, Bethesda, Maryland 20824-1220, (301) 652-2682.

Entry into occupational therapy practice is at the graduate degree level only. In order to practice, students in the bachelor's program must earn an M.A. degree in Occupational Therapy, successfully complete a minimum of 24 full-time weeks of clinical fieldwork, sit for the National Board for Certification in Occupational Therapy (NBCOT) exam and apply for a license (in most states including California).

Pi Theta Epsilon

Pi Theta Epsilon is a national honor society for occupational therapy students and alumni. This society recognizes and encourages superior scholarship among students enrolled in entry-level graduate programs of occupational therapy across the United States.

The Alpha Eta Chapter of Pi Theta Epsilon at the University of Southern California selects candidates early in the spring semester of each year based on their academic standing and their potential for leadership in the profession.

Bachelor of Science

The undergraduate curriculum leads to the Bachelor of Science with a major in occupational therapy. Although professional study begins either during the junior year or in the summer preceding the senior year, students may apply to the major at any time. Successful completion of the Master of Arts degree and successful completion of a minimum of 24 full-time weeks of clinical fieldwork are required for eligibility to sit for the National Board for Certification in Occupational Therapy. Certification from the board and licensure (most states) are required to practice as an occupational therapist. (See page 725xx for a description of the M.A. degree program.)

Application Procedures for Incoming Freshman and Transfer Applicants

Students may request admission to the occupational therapy major when applying as freshmen or when transferring to USC. Students transferring from other institutions need to enter USC no later than the first semester of their junior year. See the Undergraduate Admission section of this catalogue for admission procedures to the university.

Admission Criteria for Current USC Students

After admission to USC, students wishing to add or change their major to occupational therapy should contact the division. Requirements for admission are:

1. an autobiographical statement which demonstrates an exploration and understanding of occupational therapy as a career choice
2. a cumulative grade point average of 3.0 or higher in undergraduate course work for USC undergraduate and transferring students

3. a plan for completion of all USC Dornsife College of Letters, Arts and Sciences general education requirements and foreign language requirements by the beginning of the senior year

Application Procedures for Current USC Students

Applications will be reviewed when the following materials have been received by the Division of Occupational Science and Occupational Therapy:

1. Completed division application form
2. Current copy of the student's STARS report
3. Autobiographical statement including:
 - a. Reasons for wanting to enter the profession
 - b. Understanding of occupational therapy
 - c. Experience relevant to occupational therapy
 - d. Summary of skills and accomplishments
4. Three letters of recommendation from professors, employers or other professionals, not related to the applicant, sent directly to the division or delivered in a sealed envelope. One letter should be from a professor.

Deadlines

Freshmen may apply anytime. Sophomores must apply by April 30 to begin the program in the fall of their junior year. Juniors must apply by January 15 to begin the program with an eight-week summer session prior to their senior year. Students transferring from other institutions need to enter USC no later than the first semester of their junior year.

Program Requirements

A total of 128 units is required for the Bachelor of Science degree. An occupational therapy major cannot count any 300-level OT course toward the B.S. degree.

General Education Requirements

The university's general education program provides a coherent, integrated introduction to the breadth of knowledge needed to become a well-educated person. This program requires six courses in different categories, plus writing, diversity and foreign language requirements, which together comprise the USC Core. See pages 63xx and 250xx for more information.

Required Pre-professional Courses

We recommend that you meet with an admissions counselor within the division in order to determine course work that can be taken at USC or could be transferred and substituted for required course work. Before taking the advanced professional courses you must have completed the pre-professional required courses:

- Within the last five years
- With a minimum GPA of 3.0 (pass/fail or grades below a C are not accepted)
- From an accredited junior college, four year college or university
- Either in a classroom setting or online; however, anatomy must be completed in a classroom setting (refer to Course Work Taken Elsewhere on page 58xx)
- For a total of three or four semester units each (with the exception of medical terminology which may be 1 or 2 units)

Required Pre-Professional Courses (USC course numbers are noted)

- Enrolled or transferring students who wish to transfer credit for courses taken at another institution must gain university approval:

PRE-PROFESSIONAL COURSES		UNITS
OT 200	Medical Terminology for Health Professions	1
SOCI 200	Introduction to Sociology, or	
ANTH 201	Introduction to Social Anthropology	4
OT 251	Across the Lifespan; Occupations, Health and Disability	4
OT 260	Human Functional Anatomy for the Occupational Therapist (with laboratory), or	3
EXSC 301L	Human Anatomy (with laboratory)	4
OT 261	Human Physiology for Occupational Therapists, or	3
BISC 307L	General Physiology	4
PSYC 274L	Statistics I, or	4
HP 340L	Health Behavior Statistical Methods, and	4
HP 350L	Health Behavior Research Methods	4
PSYC 360	Abnormal Psychology	4
Gerontology or adult development (recommended but not required)		

Four-week intensive courses are offered by the division in human anatomy (OT 260) and human physiology (OT 261) from mid-May to mid-June (just prior to the start of summer professional courses) for those students who have been unable to complete those courses earlier. These courses are also offered fall and spring semesters.

Students may take OT 405L, OT 440L and OT 441L in the junior year, after having completed Human Anatomy and Developmental Psychology. Human Physiology must be completed by fall of the junior year. The remaining pre-professional courses must be completed by the start of the senior year.

Required Professional Courses

Enrollment in professional occupational therapy courses is limited to junior and senior occupational therapy majors only.

REQUIRED PROFESSIONAL COURSES		UNITS
OT 405	Foundations: Occupation	2
OT 406L	Foundations: Craft and Activity Analysis	2
OT 440L	Foundations: Kinesiology	2
OT 441L	Foundations: Neuroscience	2

Two of the following: OT 401L Practice Immersion: Adult Physical Rehabilitation (8), OT 402L Practice Immersion: Mental Health (8), or OT 403L Practice Immersion: Pediatrics (8)

OT 410	Therapeutic Use of Self	2
OT 411	Clinical Reasoning	3

OT 430	Communication Skills for Effective Practice	3
OT 451	Neuroscience of Behavior	4
OT 470	Qualitative Research for Evidence-Based Practice	4
OT 480	Quantitative Research for Evidence-Based Practice	4

Scholastic Standards

Undergraduate occupational therapy students must maintain a GPA of at least 3.0 (A = 4.0) in all required OT courses and successfully complete the Graduate Record Examinations in order to continue into the master's (M.A.) program. If an undergraduate student's OT grade point average (GPA) falls below 3.0, or if the cumulative undergraduate GPA falls below 3.0 at the end of the fall semester of the senior year, continuance is not assured.

Advising

Advisement is available through the division.

Minor in Occupational Science

The division offers a minor in the dynamic discipline of occupational science. It is one of a select few programs in the world that offers undergraduates the opportunity to explore the fields of occupational science and occupational therapy.

Unlike other creatures, humans are innately driven to fill their time with interesting, meaningful activities, which scholars call "occupations." That is, humans need to be occupied. These occupations have a profound impact on physical and mental health, one's sense of well-being and the experience of quality of life. Occupational Science seeks to understand the precise nature and function of occupations and the critical effect of daily activity on human beings. Scientists working in the field examine questions such as: what is the relationship between childhood occupations and adult competency and achievement; what constitutes a healthy balance of work, rest and leisure; what factors contribute to a good fit between a particular individual and his or her occupations; as well as many other issues.

The minor in occupational science requires a total of 20 units: a gateway course (OT 250) for 4 units plus 16 units of upper division courses selected from 11 courses. It is open to all majors at USC. An occupational therapy major cannot count any 300-level OT course toward the B.S. degree.

LOWER DIVISION: GATEWAY COURSE REQUIRED		UNITS
OT 250	Introduction to Occupational Science and Occupational Therapy	4

UPPER DIVISION: 16 UNITS		UNITS
OT 300	Occupational Expressions of Diverse Identities and Lifestyles	4
OT 310	Creativity Workshop	2
OT 312	Creating a Sustainable Lifestyle	2
OT 320	The Nature of Human Occupation: Form, Function, and Meaning	4
OT 325	The Brain: Mind, Body and Self	4

OT 330	Perspectives on the Daily Life of Families	4
OT 333	Sports Ethics	4
OT 350	Disability, Occupations, and the Health Care System	4
OT 355	Occupational Reconstructions and Social Transformations	2
OT 360	Creating the Self through Narrative: Acts of Life Story Production	4
OT 375	The Narrative Structure of Social Action: Narrative, Healing, and Occupation	4

Master of Arts

The Division of Occupational Science and Occupational Therapy offers a Master of Arts degree with two routes of entry. Those with a baccalaureate degree in occupational therapy will begin graduate course work in the post-professional master's degree program. Those with a baccalaureate degree in a field other than occupational therapy take additional 400-level courses before beginning graduate work in the entry-level master's degree program. For students in the entry-level program, eligibility to sit for the National Board for Certification in Occupational Therapy examination occurs when all course work is completed, including the equivalent of 24 full-time weeks of clinical fieldwork, and the M.A. degree has been awarded.

Admission Requirements

Applicants must have a bachelor's degree from an accredited college or university; a minimum grade point average of 3.0 (A = 4.0); total score of 1000 or higher on the General Test of the Graduate Record Examinations taken within five years of enrollment or equivalent score if taken after August 1, 2011; three letters of recommendation and an autobiographical sketch/statement of purpose. A satisfactory score on the TOEFL or IELTS within two years of enrollment is a requirement for most international students.

Those with a baccalaureate degree in occupational therapy must have graduated from a World Federation of Occupational Therapy (WFOT) approved program.

Those with a baccalaureate degree in a field other than occupational therapy also must have completed all of the following prerequisites:

- Within five years of enrollment
- Prior to the start of the program with a minimum GPA of 3.0 (pass/fail or grades below a C are not accepted)
- From an accredited junior college, college or university
- Either in a classroom setting or online; however anatomy must be completed in a classroom setting
- With each course totaling three or four semester units (with exception of medical terminology which may be 1 or 2 units) as follows (course numbers refer to USC courses, but prerequisites can be taken at any accredited college or university):

PREREQUISITES	UNITS
OT 200	Medical Terminology for Health Professions
	1

SOCI 200	Introduction to Sociology, or	
ANTH 201	Introduction to Social Anthropology	4
EXSC 301L*	Human Anatomy (with laboratory)	4
OT 261*	Human Physiology for Occupational Therapists, or	3
BISC 307L	General Physiology	4
OT 251	Across the Lifespan: Occupations, Health, and Disability	4
OT 260	Human Functional Anatomy for the Occupational Therapist (with laboratory)	3
PSYC 274L	Statistics I, or	4
HP 340L	Health Behavior Statistical Methods, and	4
HP 350L	Health Behavior Research Methods	4
PSYC 360	Abnormal Psychology	4
	Gerontology or adult development (recommended but not required)	

*If anatomy and physiology are combined, students must take two sequential semesters with a laboratory each semester (6–8 units).

Four-week intensive courses are offered by the division in human anatomy (OT 260) and human physiology (OT 261) from mid-May to mid-June (just prior to the start of summer professional courses) for those students who have been unable to complete those courses earlier. These courses are also offered fall and spring semesters.

Application Procedures

For those with a baccalaureate degree in occupational therapy: applications are accepted at any time, preferably by February 15 for fall admission.

For those with a baccalaureate degree in a field other than occupational therapy: applications for early decisions are due by November 30; all other applications are due February 15.

Applications received after the February 15 deadline are considered on a space-available basis.

Application materials include: 1) USC Online Graduate Application; 2) division online Supplemental Application for Graduate Admission; 3) three letters of recommendation; 4) transcripts from all colleges/universities attended; 5) results of the aptitude test of the Graduate Record Examinations; and 6) TOEFL or IELTS scores if required. A personal interview may be requested. Please see the division Website for the most up-to-date application procedures.

International Students

Students educated outside the United States must have their credentials evaluated by the Office of Admission before application to the division can be reviewed. See the Admission section of this catalogue. International students must demonstrate competency in English, as measured by the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS).

Degree Requirements

The M.A. degree is under the jurisdiction of the USC Graduate School. Students should also refer to the Graduate School section of this catalogue (page 97xx) for general regulations. All courses applied toward the degree must be courses accepted by the Graduate School.

Requirements include: GPA of 3.0 in all course work attempted and all course work applied to the degree; at least two-thirds of units applied to the degree must be at the 500 level or higher.

Courses prerequisite to master's degree work for students entering the M.A. program with a degree other than occupational therapy include *two of the following three*: OT 401L, OT 402L, OT 403L, *and all of the following*: OT 405, OT 406L, OT 410, OT 411, OT 430, OT 440L, OT 441L, OT 451, OT 470 and OT 480.

REQUIRED COURSES		UNITS
OT 451	Neuroscience of Behavior, and	4
OT 470	Qualitative Research for Evidence-Based Practice, or	4
OT 401 or OT 402 or OT 403	(Practice Immersion Courses)	8
OT 504	Health Promotion and Wellness	2
OT 508	Current Issues in Practice: Adulthood and Aging	2
OT 570	Occupation-Centered Programs for the Community, or	
OT 580	Leadership Capstone	2
OT 581	Quantitative Research for the Practicing Clinician	4
OT 585	Advanced Seminar in Occupational Science	2

Thesis Option

A minimum of 28 units is required: 20 units of required courses, 4 units of elective at 500 level or above, and 4 units of OT 594ab Master's Thesis. Acceptance of the thesis by the qualifying exam committee and the university completes the degree.

Comprehensive Examination Option

A minimum of 32 units is required: 20 units of required courses, 4 units of elective and 8 units of occupational therapy electives. All electives must be 500 level or above. Successful performance on a written comprehensive examination administered on campus each fall and spring semester completes the degree.

Doctor of Occupational Therapy

The Occupational Therapy Doctorate (OTD) is a post-professional degree program that provides graduates with advanced knowledge and skills in one of four leadership concentrations: 1) advanced clinical practice; 2) clinical research; 3) policy and administration; and (4) pedagogy. OTD students graduate from the program with a strong foundation in occupational science as well as in-depth mentored residency experience. The OTD prepares graduates to secure positions as expert clinicians in specialty or emerging practice

areas, as contributors to clinical research teams, as administrative leaders within health care organizations, and as non-tenure track faculty in institutions of higher education.

Admission Requirements

Applicants for admission to the OTD program are expected to have at least a baccalaureate degree from an accredited college or university and must be certified or licensed as an occupational therapist or be eligible to sit for the National Board for Certification in Occupational Therapy (NBCOT) examination at time of matriculation. Domestic students not certified upon matriculation must pass the NBCOT examination by the end of the first semester of the program to maintain enrollment. At the discretion of the OTD director, some international students may not be required to obtain NBCOT certification. A minimum GPA of 3.0 (A = 4.0) and a minimum GRE combined verbal and quantitative score of 1000 are required or equivalent score for tests taken after August 1, 2011. Applicants must have earned a minimum cumulative 3.0 GPA in the 400- and 500-level required courses. At least three letters of reference, an autobiographical statement of purpose and a current resume are required. Applicants' leadership potential, previous academic record, clinical experiences and professional accomplishments will also be considered.

International Students

Students educated outside the United States must have graduated from a program approved by the World Federation of Occupational Therapists (WFOT). USC maintains additional admissions requirements for international students (see the Admission section of this catalogue), including English language competence as measured by the Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) examination.

Application Procedures

Applications are accepted on a continuous basis. For consideration for fall semester admission, applications must be received by October 15 for maximum funding consideration. Applications received after October 15 will be considered on a space-available basis. Application requirements include: 1) USC Online Graduate Application; 2) Division of Occupational Science and Occupational Therapy online supplemental application for graduate admission; 3) three letters of reference; 4) autobiographical statement of purpose; 5) transcripts from all colleges/universities attended; and 6) GRE General Test scores.

Degree Requirements

The degree is awarded under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section, page 86xx, and the Graduate School section, page 97xx, of this catalogue, for general regulations. All courses applied toward the degree must be accepted by the USC Graduate School.

Course Requirements

Satisfactory completion of 60 units beyond the baccalaureate degree is required.

REQUIRED OCCUPATIONAL THERAPY**FOUNDATION COURSES (20 UNITS REQUIRED)**

		UNITS
OT 451	Neuroscience of Behavior	4
OT 470	Qualitative Research for Evidence-Based Practice	4
OT 504	Health Promotion and Wellness	4
OT 580	Leadership Capstone	2
OT 581	Quantitative Research for the Practicing Clinician	4
OT 585	Advanced Seminar in Occupational Science	2

REQUIRED OCCUPATIONAL SCIENCE CORE**COURSES (8 UNITS REQUIRED)**

		UNITS
OT 620	Current Issues in Occupational Science and Occupational Therapy	4
OT 621	Occupational Therapy Leadership: Contemporary Issues	4

Elective Courses (8 units required)

Students will complete a minimum of 8 course units at the 500-level or higher. A minimum of 4 of these 8 elective units must be selected from courses outside the Division of Occupational Science and Occupational Therapy.

Residency Requirement (24 units required)

Students will complete 24 units of OT 686 residency. The residency ensures that graduates of the OTD program demonstrate competence in one of the following leadership concentrations: 1) advanced clinical practice; 2) clinical research; 3) policy and administration; and 4) pedagogy.

At least 20 units applied toward the OTD must be successfully completed before enrolling in OT 686. Students may complete their residency over three consecutive semesters (6 units, 6 units and 12 units) or over four consecutive semesters. It is highly recommended that one semester of OT 686 be enrolled full-time (12 units without any other simultaneous course enrollment). Full-time residency ensures the opportunity for full immersion in residency. Faculty must approve each student's residency plan prior to enrollment. OTD residency provides students the opportunity for mentorship by experts in their OTD leadership concentration (e.g., a master clinician, a world-class occupational science researcher, a leader in professional policy or administration, or a faculty member with at least three years of academic experience).

Capstone Requirement

In the final semester of enrollment, each student will submit a portfolio demonstrating competence in his or her chosen leadership concentration. The final portfolio will include documentation of both written and oral presentation skills and expertise as designated in the residency plan.

Clinical Experience Criterion

If the student has less than three years of clinical experience as a registered and/or licensed occupational therapist at time of admission, he or she may be required

to complete at least 8 units of clinical occupational therapy courses, which may include:

OT 500abc	Clinical Problems in Occupational Therapy	2-4 each
OT 560	Contemporary Issues in School-Based Practice	4
OT 564	Sensory Integration	4
OT 572	Ergonomics	4
OT 574	Enhancing Motor Control for Occupation	4
OT 583	Lifestyle Redesign	4
OT 590	Directed Research	1-12
OT 610	Sensory Integrative Dysfunction	4

Doctor of Philosophy

The Ph.D. in Occupational Science educates individuals to engage in the scientific study of human occupation, the purposeful activities that constitute our life experiences. This important new science is chiefly concerned with the unique capacity of humans to develop adaptive skills, such as tool use and related occupational behaviors, and to choose and orchestrate daily occupations. It also seeks to understand the function, structure and interrelationship of these occupations and their impact on individuals and institutions.

The focus on occupation distinguishes this program from closely-related disciplines such as psychology, sociology and anthropology. The program emphasizes the development of research skills and encourages students to organize and synthesize knowledge to contribute to occupational science theory, as opposed to therapeutic application.

Admission Requirements

Applicants for admission to the Ph.D. program are expected to have a baccalaureate degree in an appropriate field, such as one of the biological or social sciences or occupational therapy, with a minimum GPA of 3.0 (A = 4.0) and a minimum score of 1100 on the verbal and quantitative sections of the Graduate Record Examinations or equivalent score for tests taken after August 1, 2011. At least three academic letters of reference must also be submitted. Other considerations include evidence of academic potential based on master's level study (if relevant), research skills and interest, and a statement of purpose. International students must demonstrate competency in English, as measured by the Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) examination.

Degree Requirements

This degree is awarded under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section (page 86xx) and the Graduate School section of this catalogue (page 97xx) for general regulations. All courses applied toward the degree must be courses accepted by the USC Graduate School.

Course Requirements

Satisfactory completion of 60 units beyond the baccalaureate degree is required, including the following courses:

REQUIRED CORE COURSES		UNITS
OT 640	Conceptual Foundations of Occupational Science	4
OT 641	The Nature of Occupation	4
OT 660	Research Practicum (2 units — six semesters)	12

REQUIRED CORE ELECTIVES (SELECT 5)

OT 604	Temporal Adaptation: Organization and Use of Time	4
OT 612	Information Processing and Occupation	4
OT 642	Therapeutic Uses of Self: Psychodynamic Perspectives	4
OT 643	Meaningful Engagement in Everyday Life	4
OT 644	Foundations of Research on Activity and Health	4
OT 645	Narrative, Healing and the Culture of Biomedicine	4
OT 646	Intersections of Occupational Science and Human Development	4
OT 650	Development of Adaptive Skills	4
OT 651	Adaptation and Disability	4
OT 653	Play and Occupation	4
OT 655	Work and Leisure	4

40 units of OT core courses must be completed. 20 of those units include the required courses OT 640 (4 units), OT 641 (4 units) and OT 660 (12 units). The remaining 20 units are to be selected from the other OT 600-level classes.

Those students who also wish to participate in clinical practice in occupational therapy may opt to complete a master's degree in occupational therapy. Such students are required to complete the requirements for that degree as well as the occupational therapy undergraduate major courses if they are not registered occupational therapists or eligible for registration prior to study.

Cognate Requirement

Completion of a minimum of 12 units in a topic area such as one of the following is required: quantitative research approaches, qualitative research approaches, neuroscience, social development, life span development or gerontology.

Research Practicum

Each student will enroll in 2 units of OT 660 Research Practicum in Occupation per semester for six consecutive semesters, for a total of 12 units. Students are required to begin enrolling in OT 660 in their first semester of doctoral study. In this practicum the student will develop research skills by working as part of a research team under the direction of a faculty member.

Screening Procedures

Departmental screening will be required. Passing this procedure is prerequisite to continuation in the doctoral program. Directions for obtaining and filing the Report on Ph.D. Screening Procedures are found in the Graduate School section of this catalogue.

Dissertation Enrollment

Doctoral students must submit a dissertation according to the policies and procedures described in the Graduate School section of this catalogue. Registration in OT 794 Doctoral Dissertation for a minimum of 4 units (2 units in each of two consecutive semesters) is required.

Summary of All Course Requirements

Required core courses are OT 640 (4), OT 641 (4), OT 660 (12) for a total of 20 units.

Required electives are five 600-level OT courses for a total of 20 units.

Cognate courses are a minimum total of 12 units.

Dissertation requires 2 units per semester for at least two semesters for a minimum total of 4 units.

Additional 4 units can include 4 further units of dissertation or cognate.

Total: 60 units

Foreign Language or Research Skills

The Ph.D. in Occupational Science does not require the demonstration of competence in a foreign language. However, each student is expected to achieve expertise, as defined by the student's qualifying exam committee, in either qualitative or quantitative research techniques through participation in course work and the research practicum.

Qualifying Exam Committee

The qualifying exam committee is composed of five faculty members. Three members of the committee must be regular faculty from the Division of Occupational Science and Occupational Therapy. One member must be from outside the division. Complete regulations for establishing a qualifying exam committee are found in the Graduate School section of this catalogue.

Qualifying Examination

The qualifying examination is comprehensive in nature and requires the student to demonstrate a grasp of content from the core courses and the cognate area. The examination is both written and oral and is set and administered by the student's qualifying exam committee. Refer to the Graduate School section of this catalogue for specific directions for filing a request to take the examination.

Dissertation

Doctoral students must submit a dissertation based on students' original research according to the policies and procedures of the Graduate School section of this catalogue. Upon approval of the preliminary copy of the dissertation by all members of the dissertation committee, the candidate must pass an oral defense of the dissertation. Upon successful completion of the oral defense and revisions, approval for final typing is granted and the committee recommends the candidate to the Graduate School for the Ph.D.

Teaching

To prepare students for anticipated roles as faculty members, a teaching component is incorporated into the program. Students who receive teaching assistantships will be required to assist in relevant teaching assignments for a minimum of one academic year. Those who do not receive teaching assistantships are required to present a minimum of six lectures or laboratory sessions.

Additional Information

Further information about the baccalaureate, master's and doctoral programs can be obtained by writing or calling the USC Division of Occupational Science and Occupational Therapy, 1540 Alcazar Street (CHP 133), Los Angeles, CA 90089-9003; (323) 442-2850, toll free (866) 385-4250, or by sending email to otdept@hsc.usc.edu. Information regarding the Division of Occupational Science and Occupational Therapy is available at ot.usc.edu.

Courses of Instruction

OCCUPATIONAL SCIENCE AND OCCUPATIONAL THERAPY (OT)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

OT 105g Culture, Medicine and Politics (4, Fa) (Enroll in ANTH 105g)

OT 200 Medical Terminology for Health Professions (1) Foundation of medical terminology and hospital abbreviations useful for practice in health care.

OT 220 Lifestyle Design: Introduction to Occupational Therapy (2, FaSp) Introduction to theoretical concepts concerning the relationship of engagement in activities (occupations) to health and well being. Application of these perspectives to students' own lives.

OT 250 Introduction to Occupational Science and Occupational Therapy (4) Introduction to concept of occupation and overview of human drive for meaningful activity; impact of occupations on health and well-being; analysis of personal occupational patterns; selected therapeutic applications.

OT 251x Across the Lifespan: Occupations, Health and Disability (4, FaSp) Exploration of the transformative power of occupation throughout the lifespan for all individuals.

OT 260 Human Functional Anatomy for the Occupational Therapist (3, Sm) An anatomical survey of the human musculoskeletal, nervous, cardiovascular, respiratory, digestive and urinary system. *Recommended preparation:* introductory undergraduate course in biology.

OT 261 Human Physiology for Occupational Therapists (3, FaSp) Provides a general overview of human physiology with special emphasis on physiologic systems supporting internal homeostatic mechanisms and human motion applicable for occupational therapists. Open only to OT majors. *Recommended preparation:* undergraduate biology course.

OT 300 Occupational Expressions of Diverse Identities and Lifestyles (4) Exploration of the diverse ways occupational practices become central to identity, reify standard social ideologies, and are manipulated to redress conventional standards.

OT 310 Creativity Workshop (2, FaSpSm) Theories and practice of the creative process in varied media, genres and occupations. Explores creativity in the arts, sciences, professions, evolution, daily life, and culture.

OT 312 Creating a Sustainable Lifestyle (2) Scientists and policymakers advocate lifestyle changes as crucial to solving the environmental crisis. Investigation into the development of habits that promote environmental sustainability and personal wellbeing.

OT 320 The Nature of Human Occupation: Form, Function, and Meaning (4) The complex nature of human occupation is covered from an interdisciplinary perspective. Emphasis is on how occupation contributes to human experience in a lived world.

OT 325 The Brain: Mind, Body, and Self (4, FaSpSm) Exploration of neuroscience as it impacts everyday living, from the fundamentals of neurons and synapses, to the neural basis of language, empathy, and social interaction.

OT 330 Perspectives on the Daily Life of Families (4) Examines family structures and processes, the occupational dimensions of families, and the meanings embedded in the acts of daily life of contemporary families.

OT 333 Sports Ethics (4, FaSp) Critically examines ethical issues central to the world of sports that range from matters of fair play and cheating to performance-enhancing drugs and gene-doping.

OT 350 Disability, Occupations, and the Health Care System (4) Exploration of the ways in which able-bodiedism, sexism, racism, classism and homophobia contribute to occupational opportunities or barriers and weave their way into health care.

OT 355x Occupational Reconstructions and Social Transformations (2, FaSp) The use of occupations — meaningful, purposeful activities — to restore identity, agency, health, well-being, skills, and political power to populations in problematic situations, such as wars and natural disasters.

OT 360 Creating the Self through Narrative: Acts of Life Story Production (4) Analysis of life stories, life histories, and testimonies in social interactions, texts, and films. Life stories are an occupation to re-create the "Self" in response to conflict and change.

OT 375 The Narrative Structure of Social Action: Narrative, Healing and Occupation (4) Narrative as guide and structure of practical action. Special emphasis on chronic illness and disability and narrative structure of clinical interactions.

OT 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

OT 401L Practice Immersion: Adult Physical Rehabilitation (8, FaSp) Scientific and theoretical underpinnings and knowledge and skills necessary for occupational therapy evaluation and intervention in adult rehabilitation and geriatrics; incorporates related Level I Fieldwork. Open only to upper division and master's level occupational therapy majors. *Prerequisite:* OT 405L, OT 440L, OT 441L.

OT 402L Practice Immersion: Mental Health (8, FaSp) Scientific and theoretical underpinnings and knowledge and skills necessary for occupational therapy evaluation and intervention in mental health practice; incorporates related Level I Fieldwork. Open only to upper division and master's level occupational therapy majors. *Prerequisite:* OT 405L, OT 440L, OT 441L.

OT 403L Practice Immersion: Pediatrics (8, FaSp) Scientific and theoretical underpinnings and knowledge and skills necessary for occupational therapy evaluation and intervention in pediatrics; incorporates related Level I Fieldwork. Open only to upper division and master's level occupational therapy majors. *Prerequisite:* OT 405L, OT 440L, OT 441L.

OT 405 Foundations: Occupation (2, FaSm) Introduction to basic tenets of occupational therapy history and practice, the profession's language, and foundations of occupational science; incorporates experience and self-analysis of occupation. Open only to upper division and Master's level Occupational Therapy majors.

OT 406L Foundations: Creativity, Craft and Activity Analysis (2) Exploration of craftsmanship in both historical and contemporary contexts; engagement in the craft experience to encourage creativity and to develop proficiency in analysis of performance. Open only to upper division, Master and Professional OT majors.

OT 410 Therapeutic Use of Self (2, FaSp) Exploration of efficacy, therapeutic use of self, empathy and mindfulness; development of self-awareness to support the art, craft and skill of effective therapeutic relationships. Open only to upper division and master's level occupational therapy majors. *Prerequisite:* OT 405L, OT 440L, OT 441L.

OT 411 Clinical Reasoning (3, FaSp) Dynamic look at creation and application of professional knowledge and expertise; examines interrelationship between theory and practice; incorporates narrative and illness experiences in clinical reasoning. *Prerequisite:* OT 410. Open only to upper division and Master's level Occupational Therapy majors.

OT 430L Communication Skills for Effective Practice (3, Sp) Principles of written, verbal and non-verbal communication with professionals, clients and families, from a personal and professional perspective; group interventions; interview skills; advocacy as communication. *Prerequisite:* OT 401 or OT 402 or OT 403. Open only to upper division and Master's level Occupational Therapy majors.

OT 440L Foundations: Kinesiology (2, FaSpSm) Review of joint and muscle structure and function; application of basic biomechanical, neuromuscular and musculoskeletal principles to the analysis of everyday activities and therapeutic interventions. Open only to upper division and master's occupational therapy majors.

OT 441L Foundations: Neuroscience (2, FaSpSm) Application of basic neural function to the analysis of daily living tasks and activities; review of pathological conditions that interfere with performance in occupation. Open only to upper division and master's occupational therapy majors.

OT 451 Neuroscience of Behavior (4, FaSp) Foundation for understanding neural functions involved in typical/atypical behaviors; review of neural circuitry, experimental methods, basic behavioral systems, higher order cognitive functions and associated disorders. Open only to upper division and master's level occupational therapy majors. *Prerequisite:* OT 405L, OT 440L, OT 441L.

OT 470 Qualitative Research for Evidence-Based Practice (4, FaSp) Traditions and methods of qualitative research; development of skills for research design, implementation and dissemination; critique of qualitative research for evidence-based practice and occupational science. Open only to upper division and master's level occupational therapy majors. *Prerequisite:* OT 405L, OT 440L, OT 441L.

OT 480 Quantitative Research for Evidence-Based Practice (4, FaSp) Traditions and methods of quantitative research; emphasis on formulation of clear clinical questions; finding, evaluating, and applying evidence to a clinical problem; includes journal club. Open only to upper division and master's level occupational therapy majors. *Prerequisite:* OT 410 and OT 401L or OT 402L or OT 403L.

OT 486 Clinical Internship with Seminar (1-2, max 6, FaSpSm) Clinical internship to qualify for professional certification. Seminar to integrate theory with application of treatment principles for various populations. Graded CR/NC. Open only to OT majors. *Prerequisite:* completion of all OT major academic requirements.

OT 490x Directed Research (1-8, max 12, FaSp) Individual research and readings. Not available for graduate credit. Open only to OT majors.

OT 499 Special Topics (2-4, max 8, FaSpSm) Course content to be selected in occupational therapy and occupational science.

OT 500abc Clinical Problems in Occupational Therapy (2-4, 2-4, 2-4, FaSpSm) Specific applications of occupational therapy practice in varied clinical/health settings. Seminar to integrate theory with application of intervention principles for various populations. Graded CR/NC.

OT 504 Health Promotion and Wellness (2, FaSp) Examination of relationship of occupation to health, well-being, participation; critical thinking about lifestyle factors influencing occupational engagement; occupational science and wellness in occupational therapy practice.

OT 505 Seminar in Occupational Therapy (2-4) Occupational therapy and the health care system. Open only to OT majors. Graded CR/NC.

OT 508 Current Issues in Practice: Adulthood and Aging (2) Exploration of adulthood, aging and occupation; current topics related to aging population and occupational therapy to promote health and participation throughout the lifespan. Open only to upper division, Master, Professional and Doctoral Occupational Science and Occupational Therapy majors.

OT 555 Seminar: Implementation of the Advocacy Model (2-4, Sp) The patient as decision-maker in chronic care; competency development through activities of daily living, leisure skills, time organization and life goal planning; action research. Open only to OT majors.

OT 560 Contemporary Issues in School-Based Practice (4, FaSp) Current issues in school-based occupational therapy evaluation, ongoing assessment and intervention. Topics include successful collaboration in inclusive classrooms and on IFSP and IEP teams. Open only to OT majors. Graded CR/NC.

OT 564 Sensory Integration (4, Sp) Comprehensive overview of sensory integration theory and basic intervention principles. A case-based approach will facilitate the integration of sensory integration, evidence-based practice and occupational science. Open only to OT majors. Graded CR/NC.

OT 570 Occupation-Centered Programs for the Community (4, FaSp) Development of a proposal for new or extended services; includes trends analysis, needs assessment, literature review, marketing plan, mock funding request, program evaluation and presentation. Open only to occupational therapy majors.

OT 571 Assistive Technology (4, Sp) Principles of assessment, selection, training, and follow-up with clients in the use of assistive technologies to enable and enhance participation in a meaningful occupation. Open only to OT majors. Graded CR/NC.

OT 572 Ergonomics (4, Sp) Focus on the effects of physical design in the workplace on users' injury rate, behavior, performance and stress levels. Intervention for repetitive motion included. Open only to OT majors. Graded CR/NC.

OT 573 Hand Rehabilitation (4, Fa) Occupation-based evaluation and intervention for individuals with acute and chronic hand disorders. Topics include scar management, splinting, peripheral nerve injury, wound healing and physical agent modalities. Open only to OT majors. Graded CR/NC.

OT 574 Enhancing Motor Control for Occupation (4, FaSp) Laboratory examining approaches to assessment and remediation of motor control following upper motor neuron lesions. An occupation-based approach to Neurodevelopmental Treatment (NDT) will be emphasized. Open only to OT majors. Graded CR/NC.

OT 575 Dysphagia Across the Lifespan: Pediatrics through Geriatrics (2, Sp) A comprehensive investigation of the anatomy and physiology of normal and abnormal swallowing. Didactic and hands-on study of assessment and treatment interventions will be addressed. Open only to OT majors. Graded CR/NC.

OT 576 Universal Design (4, Fa) Examination of the concepts and principles of universal design and the benefits of the approach for people with disabilities and for all individuals. Open only to Occupational Therapy and Occupational Science majors. Graded CR/NC.

OT 578 Therapeutic Communication for the Healthcare Practitioner (2) Explores the principles and practice of therapeutic communication including motivational interviewing, mindfulness, and cognitive behavioral therapy. Graded CR/NC. Not open to undergraduates.

OT 580 Leadership Capstone (2, FaSp) Professional capstone in leadership, advocacy, ethical reasoning, professional behavior, and public policy as it impacts the practice of occupational therapy; independent professional externship.

OT 581 Quantitative Research for the Practicing Clinician (4, FaSp) Traditions and methods of quantitative research for practicing clinicians; emphasis on formulation of clear clinical questions; finding, evaluating, and applying evidence to a clinical problem. Open only to occupational therapy majors.

OT 583 Lifestyle Redesign (4, Sp) Seminar examining occupations and lifestyle redesign as a contribution to health and well-being. Topics include therapeutic process, needs assessment, design and marketing of lifestyle modules. Open only to OT majors. Graded CR/NC.

OT 585 Advanced Seminar in Occupational Science (2, FaSp) Advanced analysis of occupational science concepts including dimensions of occupation and the impact of occupation on health and wellbeing; factors associated with participation in occupation at the individual, community and global levels. Open only to occupational therapy majors.

OT 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC. Open only to OT majors.

OT 594abz Master's Thesis (2-2-0, FaSp) Credit on acceptance of thesis. Graded IP/CR/NC. Open only to OT majors.

OT 599 Special Topics (2-4, max 8, FaSpSm) Recent developments in occupational therapy and occupational science.

OT 604 Temporal Adaptation: Organization and Use of Time (4, 2 years, Fa) Environmental, biological, psychological and socio-cultural influences on perceptions of and utilization of time. Implications for human adaptation.

OT 610 Sensory Integrative Dysfunction (4, FaSpSm) Differential evaluation of sensory integrative dysfunction; theory and procedure for enhancing the processing of sensory data by children with learning and behavior disorders. *Prerequisite:* admission by advance application and instructor's approval only; must be certified as an occupational or physical therapist.

OT 612 Information Processing and Occupation (4, 2 years, Fa) Phylogenesis and ontogenesis of human information processing capacity enabling engagement in occupation; components and contributions to adaptation and coping.

OT 620 Current Issues in Occupational Science and Occupational Therapy (4) Review of current occupational science research as it is applied to practice; examination of leadership opportunities; development of proposal focusing on chosen area of study. Open only to occupational therapy doctoral students. *Prerequisite:* OT 585.

OT 621 Occupational Therapy Leadership: Contemporary Issues (4) Examination of themes in occupational therapy related to power, confidence, and identity; development of leadership skills; analysis of the impact of policy and advocacy on occupational therapy. Open only to occupational therapy doctoral students.

OT 640 Conceptual Foundations of Occupational Science (4, FaSp) Analysis of the conceptual foundations and methodological orientations for occupational science, understandings of disciplinary perspectives, formulation of theoretical arguments, and the interpretation of research data.

OT 641 The Nature of Occupation (4, FaSp) Theoretical and historical foundations for the study of occupation, engagement in living and learning in everyday life.

OT 642 Therapeutic Uses of Self: Psychodynamic Perspectives (4, FaSp) Survey of the diversity of analytic conceptions of subjectivity and intersubjectivity. Emphasis on the way these ideas influence the notion of therapeutic efficacy within Occupational Science.

OT 643 Meaningful Engagement in Everyday Life (4) Exploration of the subjective experience of meaningful engagement in work, play, and the occupational pursuits of everyday life, drawing on contributions from the social sciences.

OT 644 Foundations of Research on Activity and Health (4, FaSp) Examination of effectiveness and efficacy research, study design and methodology, dimensions of adaptation and research methods through the lens of two division-based research programs.

OT 645 Narrative, Healing and the Culture of Biomedicine (4, FaSp) Introduction to narrative as analytic framework for considering chronic illness, disability, occupation, and the moral and cultural influences on the clinical reasoning of health professionals.

OT 646 Intersections of Occupational Science and Human Development (4, FaSp) Analysis of occupational science perspectives related to human development and participation in sociocultural practices and examination of developmental theories and their relationship to occupational science.

OT 650 Development of Adaptive Skills (4, Fa) Critical analysis of occupation as means and product of human adaptation. Adaptive skill development from traditional and occupational science approaches. Research methods and results.

OT 651 Adaptation and Disability (4, Sp) Social and cultural adaptation to disabilities and stigmatized medical conditions through anthropological studies of groups and individuals. Training in ethnographic methods with such populations. (Duplicates credit in former OT 551.)

OT 653 Play and Occupation (4, 2 years, Sp) Major conceptual, theoretical, and empirical studies of play; development and organization of play in relation to occupation; research on play as occupation. (Duplicates credit in former OT 553.)

OT 655 Work and Leisure (4, Sp) Ontogenesis and phylogenesis of work and leisure. Systems view of person/environmental interactions affecting competence and satisfaction with activity. Occupation and the need for mastery.

OT 660 Research Practicum (2, max 12) Experiential learning through immersion in one or more externally funded research groups in the Division, enabling intense participation in multi-skilled research groups. Graded CR/NC. Open only to Occupational Therapy and Occupational Science majors.

OT 686 Residency (6 or 12, max 24, FaSpSm) Residency involving development, administration, evaluation, or policy formulation for occupation-centered programs in clinical or community settings. Development of portfolio for professional doctorate. Open to OT majors only. Graded CR/NC.

OT 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC. Open only to OT majors.

OT 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSp) Credit on acceptance of dissertation. Graded IP/CR/NC. Open only to OT majors.



When United States Supreme Court Justice Antonin Scalia visited the USC Gould School of Law, he acted as a guest professor for the entire first-year class, met with members of the USC Federalist Society, pictured here, and also delivered the 2012 Roth Lecture, where he defended constitutional originalism.

The USC Gould School of Law provides a forward-looking, interdisciplinary and inter-professional legal education guided by nationally renowned professors and energized by an engaged and collegial student body. As one of the most diverse of the nation's top law schools, USC Gould is made up of students from throughout the country and around the world whose ideas and experiences enrich the learning process and provide new perspectives on the law. Through close collaboration, interdisciplinary academic training and hands-on application of skills, students acquire the experiences and knowledge necessary to succeed as leaders in a global environment.

USC Gould alumni are partners in the world's largest law firms, CEOs and presidents of multimillion-dollar companies, and leaders in government and public service organizations. Since its founding in 1900, the school has produced hundreds of judges on state and federal courts and elected officials ranging from mayor of cities large and small to a United States senator.

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LL.M., JSD; Shmuel Leshem, LL.B., MBA, JSD, LL.M.;

Camille Gear Rich, J.D.; Stephen Rich, M.A., J.D.*; Nina

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Noel M. Ragsdale, J.D.*

*Recipient of university-wide or school teaching award.

Degree Programs**Juris Doctor**

The Juris Doctor (J.D.) is the basic law degree. To obtain the degree, full-time attendance for six semesters is required. During the first year, the student takes a required curriculum of basic courses that examines fundamental legal institutions and addresses legal problems relevant to today's society and the modern

practice of law. During the second and third years the student must complete a writing requirement and at least one course that provides substantial instruction in professional skills generally regarded as necessary in the practice of law. The remainder of the courses taken in the last two years are primarily elective.

Dual Degrees

USC Gould maintains dual degree programs with the graduate programs in accounting, business administration, economics, gerontology, pharmacy, philosophy, public administration, public policy, social work, political science, politics and international relations, religion, real estate development, and communication. These programs enable qualified students to earn a law degree (J.D.) and the appropriate master's degree. If the master's degree normally requires one year of study, a student in a dual degree program earns both degrees in only three years. If the master's normally requires two years of post-baccalaureate courses, a total of four years is required. To earn the J.D., all students (including dual degree students) must complete 35 numerically graded law units at USC beyond the first year curriculum.

The goal of these programs is to encourage law students to gain a recognized competence in another discipline that has a direct relevance to the roles lawyers play in society. The dual degree programs are based on the premise that some topics covered in the law school are also covered in the programs of the cooperating departments, so that some credit toward the law degree may appropriately be given for specified graduate work taken in the cooperating department. Similarly, the cooperating departments have recognized that some credit toward the master's degree may appropriately be awarded for certain work completed in the law school.

LL.M. Degree

The LL.M. program is a master's degree program for foreign graduate students trained in law. This two-semester, full-time program introduces foreign lawyers to American law and the U.S. legal system and prepares them for leadership roles in the global market. After successfully completing the program, students will be awarded the Master of Laws degree.

MCL Degree

The MCL program is a master's degree program for foreign graduate students trained in law who have already earned their LL.M. degree. This two-semester, full-time program is focused on the study of comparative law. Students are provided with the opportunity to study the differences, similarities and interrelationships of different systems of law around the world. After successfully completing the program, students will be awarded the Master of Comparative Law degree.

Honor Society

Order of the Coif: Order of the Coif is a national honorary scholastic society that encourages excellence in legal education.

Qualifications: Membership will be extended to a graduating law student whose cumulative grade point average ranks in the top 10 percent of all graduating

students, provided that he or she has completed at least 75 percent (66 units) of law studies in graded courses.

Adviser: Scott Altman, Vice Dean, Gould School of Law, (213) 740-2544, saltman@law.usc.edu

Applications: Students are nominated by the law school.

Continuing Legal Education

The law school's Continuing Legal Education Program provides the legal community with the greatest variety of offerings of any law school in the west. USC Gould has been approved as a provider of Minimum Continuing Legal Education (CLE) by the State Bar of California and offers general CLE and Legal Specialization Credit for lawyers, as well as continuing education credits for accountants and real estate professionals.

USC Gould is a national leader in continuing education, presenting six annual programs designed for sophisticated attendees from the bar, judiciary, accounting, business and law student communities and supported by both law firm and corporate sponsors.

CLE programs in 2012–2013 include the Institute on Entertainment Law and Business, Trust and Estate Conference, Tax Institute, Institute for Corporate Counsel, Real Estate Law and Business Forum, and Intellectual Property Institute.

For detailed program and registration information, visit law.usc.edu/cle. For additional questions, call (213) 821-3580 or email cle@law.usc.edu.

Tuition and Fees (Estimated)

Students in the law school's J.D. program pay tuition of \$26,407 per semester (13–17 units). For less than 13 units the tuition is \$2,041 per unit, and tuition is an additional \$1,957 for each unit over 17.

Students in the law school's LL.M. and MCL programs pay tuition of \$26,407 per semester, for two semesters.

The university reserves the right to assess new fees or charges as it may determine. The rates listed are subject to change without notice by action of the Board of Trustees.

These fees are based upon current information available at the time of publication and are subject to possible later change.

In addition to the mandatory fees charged to all USC students, law students must also join the Student Bar Association. In 2012–2013, this membership fee was \$25 per semester.

Admission Requirements — J.D. and Dual Degrees

First-year students must have a bachelor's degree from an accredited college by the beginning of their law school classes. USC Gould does not require applicants to take any specific college courses, and discourages pre-law students from enrolling in college courses that duplicate the law school curriculum. The faculty recommends college courses that are intellectually challenging and require disciplined study. Training in careful reading and skilled writing is most valuable, as are courses involving seminar discussion and sustained research. The student will find that a broad exposure to such fields as economics, philosophy, history, political science, anthropology, mathematics and psychology is

more useful than narrow exposure to vocationally oriented courses.

All applicants are required to take the Law School Admission Test (LSAT) administered by the Law School Admissions Council. Applicants must take the test no later than December if they seek to start law school the following August.

Like most law schools, the USC Gould School of Law requires students to use the Law School Data Assembly Service (LSDAS). The LSDAS assembles an applicant's transcripts and LSAT scores and forwards copies of them to law schools of the applicant's choosing. An applicant who has previously registered with the LSDAS need only request on the appropriate form that the name of the University of Southern California Gould School of Law be added to the list of schools to which the student is applying. Further information about the LSAT and the LSDAS may be obtained from the Law School Admission Council, 662 Penn St., Box 40, Newtown, PA 18940 and online at lsac.org.

Detailed information regarding admission application procedures is available from the Dean of Admissions, University of Southern California Gould School of Law, University Park, Los Angeles, CA 90089-0074 and on the school's Website (law.usc.edu).

Transfer Students and Visiting Students

A student in good standing at a law school that is approved by the American Bar Association may apply for admission with advanced standing either as a transfer student or as a visiting student. Transfer students enter USC Gould after one year at another law school; they then spend two years at the law school and earn the J.D. degree from USC. Visiting students spend one or two semesters at the law school during their third year of law school; they are not eligible for a USC degree. For further information, please request Transfer/Visitor Information from the Admissions Office at USC Gould.

Transfer LL.M. Students

Law students who are enrolled in USC Gould's LL.M. program for foreign lawyers may apply to the J.D. program as transfer LL.M. students during the transfer application period. Only USC Gould LL.M. students may apply in this manner. Those who have already been awarded an LL.M. at another U.S. law school may apply as international J.D. applicants to the three-year program. For further information, request LL.M. transfer information from the Graduate and International Programs Office at USC Gould.

Admission Requirements — LL.M. Degree

Students submitting an application must have earned a basic law degree, a Bachelor of Laws (LL.B.) degree or the foreign equivalent. Some experience following the completion of the first professional degree is preferred. For further information, contact the law school at (213) 821-5916 or visit the school's Website (law.usc.edu).

Admission Requirements — MCL Degree

Students submitting an application must have earned a basic law degree, a Bachelor of Laws (LL.B.) degree or the foreign equivalent and will have previously earned their LL.M. degree. Some experience following the completion of the first professional degree is preferred. For

further information, contact the law school at (213) 821-5916 or visit the school's Website (law.usc.edu).

Registration

Registration is handled by the Registration and Records Office of the USC Gould School of Law. First-year students will automatically be registered in their fall semester courses approximately two to three weeks prior to the beginning of the school year and for their spring semester courses approximately two to three weeks prior to the dates listed in the law school calendar for upper-division student registration.

Grading and Attendance Policies

Grading

The grading system uses both numbers and letters in a range from 1.9 to 4.4 with letter-grade equivalents ranging from F to A+. The grade equivalents are: A+ (4.1–4.4); A (3.8–4.0); A- (3.5–3.7); B+ (3.3–3.4); B (3.0–3.2); B- (2.7–2.9); C+ (2.5–2.6); C (2.4); C- (2.1–2.3); D (2.0); and F (1.9). Students receiving a grade of 1.9 will not be given credit for the course toward graduation. A student who fails a first-year course must repeat the course, but both grades will be included in computing that student's general average. Other courses may not be repeated except on petition to the associate dean. A student with a weighted cumulative average of less than 3.0 at the end of the year will be placed on restricted enrollment. A student with a weighted cumulative average of less than 2.7 at the end of any year will not be permitted to continue.

Credit/D/F

After the first year, a student may take up to a total of 8 units on an elected CR/D/F basis, chosen from among courses otherwise graded in a normal manner. No more than 4 such units may be taken in a semester. The student must elect to take a course CR/D/F during the first two weeks of the semester. Courses or seminars may, at the instructor's option, be designated prior to registration as not available for CR/D/F grading. To earn the J.D., all students (including dual degree students) must complete 35 numerically graded law units at USC beyond the first year curriculum.

Students may also take such courses regularly offered only on a CR/D/F basis, in addition to courses taken under this rule.

Withdrawals from Courses

A student may not withdraw from a course later than two weeks after the first day of classes of any semester without permission of both the associate dean and the instructor.

Attendance

Class attendance is an important part of law school education. It assists both the individual and fellow students in making the most of the educational opportunity offered. Students should, therefore, attend class regularly and participate in the discussion. Professors may require attendance and may take attendance into account in evaluating student performance.

Juris Doctor

The Juris Doctor is the basic law degree. To obtain the degree, a student must satisfactorily complete 88 units, be in full-time attendance for six semesters and complete all required courses. Several options are available through which students may, with appropriate permission, take courses outside the law school. Except with special permission, however, each student (including a dual degree student) must successfully complete at least 35 units beyond the first year curriculum, in law courses, taken at this law school, and graded in the normal manner. Each student must also complete a minimum of 65 of the required 88 units by attendance in regularly scheduled class sessions at the law school. A law student is expected to devote the major portion of his or her time to law studies; any outside employment must therefore be restricted. First-year students are not permitted to hold jobs, and second- and third-year students may not hold outside employment requiring more than 20 hours of work per week.

First-year students are required to carry the full load of courses prescribed for that year, and second- and third-year students are required to carry between 13 and 17 units each semester, unless special permission to carry a reduced or enlarged schedule is granted by the associate dean. After completion of the first full year of law study, students who are expecting a child may be given permission to carry a reduced load in their subsequent years, but they must complete all requirements for the degree within a reasonable period of time (usually within four years). All students must complete six full-time semesters.

Requirements for degrees, as well as the courses offered, may be changed by the faculty at any time. The associate dean may waive some requirements for individual students.

The First Year

During the first year, the student takes a required curriculum of basic courses that examines fundamental legal institutions and addresses legal problems relevant to today's society and the modern practice of law.

In the fall semester, Law, Language, and Values introduces students to foundational concepts in legal reasoning, including theories of interpretation, the rule of law and normative reasoning.

Torts I explores the individual's obligation to refrain from harming others and studies the bases for compensating persons who suffer injuries — either by holding responsible whomever is at fault for the harm, or by invoking other principles of liability including the efficiency of resource allocation and spreading of losses.

Procedure introduces students to the issues of what constitutes fair, adequate and efficient procedures in resolving legal disputes. Study focuses on the procedures outlined in Federal Rules of Civil Procedure.

Contracts studies the law regulating consensual arrangements entered into for commercial purposes. It concerns such questions as what promises do and should the state enforce and what remedies are available when enforceable promises are breached.

In the spring semester, students take Criminal Law, which studies issues relating to the decision, by legislature or court, to designate behavior as a "crime." Significant attention is given to the moral, psychological

and philosophical issues involved in ascribing criminal responsibility.

Legal Profession examines the functions of the lawyer in modern society, the history and organization of the legal profession, as well as lawyers' conflicting duties. It also looks into the adversary system, equal access to justice, and other problems of ethics and professional responsibility.

Constitutional Law considers the delineation of spheres of responsibility between the judiciary and legislature, the nation and the state, and the government and the individual.

Property analyzes the development of rules dealing with land, water and other natural resources, frequently from historical and economic perspectives.

All students take a year-long course, Legal Research, Writing and Advocacy. The course is coordinated with other first-year courses, and provides students an opportunity to draft pleadings and to prepare legal memoranda and briefs. Toward the end of the second semester, each student participates in a moot court argument based on work previously prepared for the course.

Students study basic sources of the law — case reports, constitutions, statutes and interdisciplinary materials. There is no uniform method of teaching, but Socratic dialogue and class discussion are primarily employed to help the students analyze issues, reasons and arguments. Moreover, law school faculty have traditionally employed interdisciplinary approaches in analyzing legal problems. First-year classes meet in sections of 60 to 100 students, about half the class size of many law schools.

The Second and Third Years

Requirements

The upper two years of law study are primarily elective, with only two requirements. First, students must satisfy the upper division writing requirement, either by completing a major faculty-supervised writing project, such as a dissertation, or by taking a course with a substantial writing component.

Second, students must enroll in course work that offers substantial instruction in professional skills generally regarded as necessary for the effective and responsible participation in the legal profession. Such course work includes simulation courses (including Trial Advocacy and Pretrial Advocacy), live-client clinical offerings and courses involving the drafting of legal documents (including Contract Drafting and Negotiation).

Course Offerings

The basic courses that most students elect to take — for example: Business Organizations, Evidence, Taxation, and Gifts, Wills and Trusts — are offered every year and usually twice a year. Other courses listed are offered once a year, or in some cases, once every several years. Each year the law school attempts to provide upper-division students with a wide variety of optional specialized courses. Often these reflect the research interests of the faculty. Some examples in recent years have been Biotechnology and the Law, Global Warming, Counterterrorism and Homeland Security, Wrongful Convictions, Reproductive Rights, Special Education and Disability Law, and seminars on the Enron era. Because there are specialty courses in nearly every major

area of the law, upper-division students are able to concentrate in a particular area, or, if they prefer, pursue a broad, basic legal education.

Clinical Offerings

The upper-division curriculum includes a variety of opportunities for clinical legal education. "Clinical" courses are of two kinds. First, clinical refers to courses in which the learning of legal principles occurs through actual work on cases in particular subject matter areas. For example, the law of prisoners' rights and post-conviction remedies is taught in the Post-Conviction Justice Project, a course in which students represent inmates in the California Institution for Women. This representation is under the direct supervision of full-time law school faculty members. About 20 students participate each semester, traveling to the prison to meet with their clients on a regular basis, attending seminars at the law school, preparing briefs and papers, drafting habeas petitions, and negotiating and dealing with prosecutors and prison and court personnel. In addition, students make court appearances on behalf of clients in state and federal courts, as well as courts of appeals.

The second type of clinical course concentrates on specific lawyering skills taught in a classroom setting through the use of hypothetical case materials, with actors and actresses playing the roles of clients. The best illustration of this form of clinical teaching is the three-course sequence of Pretrial, Trial and Appellate Advocacy, which covers the stages in the litigation process suggested by the course titles. In these courses, students actually perform, in a simulated courtroom or law office environment, the multiple tasks required of lawyers. Most work is done in small groups; students are videotaped and intensively reviewed by the instructors. A student can take part or all of this sequence. The three courses together require the student to do at least the following: client interviewing and counseling, legal research, fact-finding, drafting of legal documents, negotiation with opposing counsel, arguing pretrial motions to a judge, preparing witnesses to testify, selecting a jury, conducting direct and cross-examination, proposing and opposing exhibits and testimonial evidence, arguing to a jury, and drafting and arguing an appellate brief.

The Post-Conviction Justice Project and the advocacy courses are not the only clinical courses in the curriculum, but they are useful examples of the variety of clinical teaching. A course in a specific area of law, like the Post-Conviction Justice Project, necessarily requires students to acquire basic courtroom, negotiation and client interviewing skills. The skills-oriented advocacy courses require students to be familiar with substantive areas like evidence, procedure and the law in the area of the hypothetical client's problems. These two kinds of clinical courses supplement each other, just as substantive knowledge and expert skills do in the practice of law. Considered as a whole, USC's clinical courses provide the foundation of knowledge and skill necessary to begin the practice of law.

Judicial Externships and Clinical Internships

The clinical opportunities listed previously are focused primarily within the law school. In addition, there are two categories of clinical options for students to pursue

outside the law school in the actual environments of courts and law offices.

The first of these, the judicial externship program, enables students to receive credit for full- or part-time work as an extern to a judge of the state or federal court. Students are selected by the judges themselves. USC students have served as externs in the California Supreme Court, U.S. Court of Appeals, U.S. District Court, U.S. Bankruptcy Court, California Court of Appeal and Superior Court. During the externship, each student is supervised by the assistant dean and the placement supervisor.

The second program, the clinical internship option, allows USC Gould students to work part-time in government agencies, legal services programs or other non-profit organizations under the supervision of practicing attorneys and faculty members. Students earn academic credit while providing representation to actual clients, learning important government processes or participating in large-scale impact litigation. Since the program includes more than 50 pre-approved agencies, students may choose from a wide range of clinical internships.

Neither program is considered a regularly scheduled class session for purposes of graduation requirements.

Individual Research Projects

A wide variety of courses and institutes offers opportunities for upper-division students to engage in individual research under faculty supervision and often in conjunction with course offerings, as well as to participate in large research projects. Projects presently underway include the uses of ocean and sea resources, the development and regulation of geothermal energy, sentencing practices in felony cases, the effects of real estate taxation, the delivery of legal service to low- and middle-income persons, the civil commitment of elderly persons, the relationships between corporate law and actual corporate practices, and theoretical studies in law and economics. Such research projects are financed by grants from the Brookings Institution, the U.S. Commission on Civil Rights, the National Science Foundation, the Ford Foundation, the Lincoln Institute of Land Policy, the National Institute of Mental Health, and the Energy Research and Development Administration.

Independent research completed for academic credit is not considered a regularly scheduled class session for purposes of graduation requirements.

Courses Outside the Law School

With the concurrence of the associate dean, a student may receive up to 12 units of J.D. credit for courses taken outside the law school. These courses must be on the graduate level and may be taken only at USC. Taking graduate level courses outside the law school is an alternative to the dual degree program; a student may not pursue both approaches. With the approval of the associate dean, a student may receive a limited number of J.D. credits for undergraduate language courses taken at USC. For purposes of meeting the 35-graded-units rule, all non-law courses are counted as CR/D/F units.

A student may, with permission of the associate dean, enroll in and transfer the credit from a law course taken at another school that is a member of the Association of American Law Schools, if the course is equivalent to one included in the USC Gould curriculum that will

not be offered here during the semester the student takes the course. Credit will be granted only for courses graded "C" or better. A maximum of 5 such units may be counted toward the J.D.

Courses taken outside of the law school are not considered regularly scheduled class sessions for purposes of graduation requirements.

Course Selection in the Upper Division

With such a variety of courses available, how do second- and third-year students go about selecting the program that will be best suited to their individual interests and ambitions?

There are no precise rules or proven methods for selecting second- and third-year courses. To a large extent, these choices reflect each student's personal assessment at the end of the first year — strengths and weaknesses, developing intellectual interests and first tentative career plans. For this reason, the combination of courses most desirable for one person will not necessarily be best for anyone else. Students are urged to be wary of the notion that there is a specific, recommended curriculum to follow. But reluctance to impose a model course of study does not mean that no guidance is available, for there are at least four ways of thinking about these choices that, in combination, will help each student choose the best array of courses.

One recommended approach to course selection is to choose courses taught by professors the student admires, without regard to subject matter. For each student there are teachers who are particularly able to create intellectual excitement and whose approach to analysis and teaching strikes a responsive note. Students will benefit as much from exposure to a specific professor's analytic skills and approach to legal issues as from specific course content.

A second approach is to choose courses that look exciting, without worrying about whether such courses are directly related to the student's current career plans or to some idea of traditional curriculum. If it appears that a course will be intellectually interesting, will expose students to a new area of the law, or provide needed variety, there is already more than enough reason to enroll. Courses taken because of enthusiasm for either the instructor or the subject matter often lead to the richest academic experience of law school.

The third way to make decisions about taking courses is to classify them according to clusters that emphasize similar issues or themes and then select from each area. For example, a student interested in ideas about family relationships will find them discussed in different contexts in Gifts, Wills, and Trusts; Family Law; and the Children's Legal Issues Practicum. Trial Advocacy and Pretrial Advocacy are courses that teach practical litigation skills, relating various performance tasks to the underlying skills of legal writing, advocacy, legal counseling, negotiation, and factual analysis. A further example includes courses involving close work with statutes, such as Labor Law, Securities Regulation and Taxation, any of which will provide opportunities to develop important and transferable skills.

Finally, students might think about selection as a way of building a wide substantive expertise in an area of particular interest. For example, the following courses are crucial to one anticipating a substantial wills and estate planning practice: Family Law; Community

Property; Taxation; Estate Planning; Real Estate Transactions; and Gifts, Wills and Trusts. This kind of course planning requires some thought and investigation, since a casual examination might omit such courses as Community Property (which may affect one's legal ability to transfer property by will), and Real Estate Transactions (since various forms of property ownership may dictate a specific will or create planning considerations).

These approaches to course selection describe only some of the ways in which students might make reasoned choices about their academic programs. Formal and informal academic counseling are available from the associate dean, the assistant deans and other faculty. In addition, students are encouraged to follow the written recommendations available in the online *Student Handbook* available via the Student Portal on the USC Gould School of Law Website.

Dual Degrees

Admission

Students may be accepted for a dual degree program when they are accepted to the law school, although most students do not apply until sometime in the first year. All programs require that students successfully complete the required first year of law school before beginning work toward the master's degree. Credit toward the law degree may not be given for graduate work completed prior to the completion of the first year of law school, although some credit toward the master's degree may be allowed by the faculty of the cooperating department of approved work completed prior to the first year of law school. Students are not eligible for either of their dual degrees until they complete the requirements for both degrees. All students (including dual degree students) must complete at least 35 numerically graded USC Gould units beyond the first year curriculum.

Following are general descriptions of the dual degree programs. Students interested in further information should consult the USC Gould Admissions Office.

Juris Doctor/Master of Arts in Economics

Students are required to complete 92 units of law and economics course work, 4 units of which must constitute a thesis acceptable to the faculties of the law school and the Department of Economics. Before enrolling in economics courses, students must have completed an undergraduate course in probability and statistical inference (e.g., BUAD 310). Students with undergraduate degrees in such disciplines as business, economics, mathematics and psychology will usually have taken such a course as part of their undergraduate program.

First Year: Required law school courses.

SECOND AND THIRD YEARS:		UNITS
ECON 500	Microeconomic Analysis and Policy	4
ECON 511	Econometric Methods, or	
ECON 513	Practice of Econometrics	4

Two Additional Graduate Level Courses in Economics (8 units): ECON 680 Industrial Organization and ECON 681 Economics of Regulated Industries are recommended, but the student is free to choose any graduate

level courses other than ECON 590 or ECON 790 in consultation with the program adviser. ECON 401 Mathematical Methods in Economics may be substituted for one of these courses, and ECON 417 Statistics for Economics or ECON 414 Introduction to Econometrics may be substituted for the other. (These three courses are applicable toward graduate credit.)

Four Units of Thesis: The thesis must be acceptable to both the faculty of the law school and the faculty of the Department of Economics.

Thirty-nine Units of Law Courses: including one course in a subject matter related to economics (including but not necessarily limited to Taxation, International Business Transactions, Antitrust Law I, Regulated Industries, Labor Law, Administrative Process, Business Enterprise Taxation or Land Use Controls). In addition to the LSAT, students interested in this dual degree program are required to take the aptitude and advanced economic portions of the Graduate Record Examinations (GRE).

Juris Doctor/Master of Science in Gerontology

The J.D./M.S. dual degree combines the knowledge of the older population with understanding of the legal system. The program prepares graduates for a number of roles in both public and private sector organizations. Students are required to complete 110 units of course work, 74 from the law school and 36 from the Davis School of Gerontology. The first year is devoted to required law courses, and the second, third and fourth years combine gerontology and law courses.

Gerontology Requirements

The Master of Science in Gerontology will require 36 units of course and fieldwork that cover the core content of the M.S. program.

GERONTOLOGY REQUIREMENTS		UNITS
GERO 510	Physiology of Development and Aging	4
GERO 520	Life Span Developmental Psychology	4
GERO 530	Life Span Developmental Sociology	4
GERO 540	Social Policy and Aging	4
GERO 555	Integrating Gerontology: A Multidisciplinary Approach	4
GERO 591	Field Practicum	8
GERO 593	Research Methods	4
Gerontology elective		4

The Davis School of Gerontology will waive 16 units of electives, which are required in the regular M.S. program, as well as GERO 589 Case Studies in Leadership and Change Management because students enrolled in this program have a primary professional focus in law.

Law School Requirements

The law school requires 74 units of credit.

FIRST YEAR REQUIREMENTS		UNITS
LAW 502	Procedure I	4
LAW 503	Contracts	4
LAW 504	Criminal Law	3
LAW 505	Legal Profession	3

LAW 507	Property	4
LAW 508	Constitutional Law I	4
LAW 509	Torts I	4
LAW 512	Law, Language, and Values	2
LAW 515	Legal Research, Writing and Advocacy I	3
LAW 516	Legal Research, Writing and Advocacy II	2

Elective Course Work

The second and third year of law study are primarily elective with one requirement. Students must satisfy the upper division writing requirement, either by completing a major, faculty-supervised writing project such as a dissertation, or by taking a course with a substantial writing component.

The law school will waive 14 units of electives which are required in the regular J.D. program.

Juris Doctor/Master of Business Administration

In addition to the LSAT, applicants to this dual degree program are required to take the Graduate Management Aptitude Test. Requirements for the dual degree program are listed in the Marshall School of Business section of this catalogue on page xx.

Juris Doctor/Master of Business Taxation

The Leventhal School of Accounting offers a specialized 45-unit program in taxation leading to the Master in Business Taxation (MBT). However, up to 15 units of preliminary courses in the MBT program may be waived by the Leventhal School of Accounting in light of previous education or completion of a proficiency examination. The total number of units required may thus vary, but all students are required to complete a minimum of 30 units of business courses and maintain an overall grade point average of 3.0 for these courses. Students also must complete 76 law units to satisfy the J.D. portion of the dual degree. Requirements for this dual degree are listed in the Leventhal School of Accounting section of this catalogue on page xx.

Juris Doctor/Pharm.D.

Admission Requirements

Admission to the dual Pharm.D./J.D. program is competitive, and involves meeting admission requirements and gaining acceptance to both the School of Pharmacy and the law school. Students will not be given special consideration for admission to either program because they are applying for the dual degree. Students that have a baccalaureate degree may apply to the dual Pharm.D./J.D. degree program in two ways. First, they may apply at the time they submit their Pharm.D. application by concurrently submitting applications to both schools. Students who elect this approach must identify themselves on their Pharm.D. applications as potential dual Pharm.D./J.D. degree students. Students who are admitted to both schools will be offered admission to the dual degree contingent on passing all courses in their first year of the Pharm.D. with a minimum 3.0 GPA.

Students pursuing the dual Pharm.D./J.D. degree must notify the law school in a timely fashion that they will be enrolling in the dual Pharm.D./J.D. degree program and will not matriculate at the law school until the following year. Students who are accepted only by one school may choose to attend that school but will not be

eligible for the dual degree. Second, students can apply to the dual degree by submitting an application to the law school during their first year of enrollment in the Pharm.D. program prior to the law school's published application deadline. Students who elect this approach must apply through the School of Pharmacy. Students admitted to the law school using this approach would be offered admission to the dual degree contingent on passing all courses in their first year of the Pharm.D. with a minimum 3.0 GPA. See the admissions section of the School of Pharmacy and the law school for specific requirements.

Degree Requirements

The professions of pharmacy and law are distinctly different, yet pharmacists are often involved in legal issues and lawyers frequently deal with pharmacy, drug, health care, product development and toxin-related matters. This dual degree program provides qualified students with an efficient mechanism for obtaining the expertise and professional credentials that will enable them to develop professional practices that bring together expertise in both areas.

Overall Requirements

A student is required to complete all work for both degrees within six years of the date of matriculation at the School of Pharmacy (Pharm.D.) and five years of matriculation at the law school (J.D.). The entire dual degree program will take six years to complete. Dual degree students will be allowed to use 12 units of approved J.D. course work (elective or required) to meet 12 units of Pharm.D. electives and 12 units of approved Pharm.D. course work (elective or required) to meet 12 units of J.D. electives. A faculty qualifying exam committee will determine the exact program for each student, including the appropriateness of courses in one program used to meet elective requirements for the other program. A total of 208 units is required for the dual degree.

Pharm.D. Requirements

Dual degree students must successfully complete 144 units of Pharm.D. and acceptable J.D. units to receive the Pharm.D. degree. The 144 units must include 132 units of required and elective pharmacy course work plus 12 units of J.D. course work deemed acceptable to meet Pharm.D. elective requirements. Dual degree students should graduate with their Pharm.D. degrees at the completion of the first semester of the sixth academic year of the dual degree program. Students will be eligible to sit for the Pharmacy Board Exams after completion of the Pharm.D. degree requirements. However, dual degree students will not actually be awarded their Pharm.D. degrees until they complete requirements for both degrees.

Juris Doctor Requirements

Dual degree students must successfully complete 88 units of J.D. and acceptable Pharm.D. course work during the second to sixth years of the dual degree program to receive the J.D. degree. The 88 units must be composed of 76 units of J.D. course work, including satisfaction of the upper-division writing requirement and any other substantive requirements, plus 12 units of Pharm.D. course work deemed acceptable to meet J.D. elective requirements. No J.D. credit will be awarded

for Pharm.D. course work completed prior to matriculation in the law school. Students cannot receive the J.D. degree under requirements for the dual degree program without prior or simultaneous completion of the Pharm.D. degree.

Both professions require passing a state board or bar exam to practice the respective professions. Neither of these degrees requires a thesis or comprehensive final exam.

Recommended Program

Pharm.D./J.D. dual degree students will begin with the first year of the Pharm.D. curriculum (36 units). During the second year, students will take the first year law core (33 units), plus 3–5 Pharm.D. units. Due to the rigor of the law school core, pharmacy courses during the first year of law school are limited to non-science courses. The third through fifth years of the program focus on Pharm.D. courses with sufficient law courses to maintain students' educational momentum in law. Students should complete their Pharm.D. requirements during the fall of their sixth year of the program and their law course work also during the sixth year. Students must complete both degree requirements by the end of the sixth year of the program.

Juris Doctor/Master of Public Administration

Students are required to complete 97 units of course work. Candidates for the dual degree must fulfill the statistics requirement of the MPA degree. See the Master of Public Administration section, page xx. Requirements for this dual degree program are listed in the USC Price School of Public Policy section of this catalogue, page xx.

Juris Doctor/Master of Public Policy

The USC Price School of Public Policy and the law school offer a dual degree that enables qualified students to earn both a Juris Doctor and a Master of Public Policy in approximately four years of study.

The dual degree allows students to acquire a blend of the analytic skills of public policy and an understanding of legal institutions and processes. This combination of knowledge is well suited for law students who want to affect the policy-making process and craft legislation to aid in achievement of public policy goals. It is equally appropriate for prospective policy analysts who are interested in law and public policy.

Students must apply to, and be accepted by, both schools. They may be accepted to the dual degree at the time of their acceptance to the law school or at the beginning of their second year of law school. Dual degree students spend the first year of the program completing the required first year of law school. The remaining units of law school courses and the required 36 units of core MPP courses are taken by students in the second through fourth years.

Students are required to complete 114 units of course work, including 78 units in the Gould School of Law and 36 units in the USC Price School of Public Policy. The MPP program has a statistics prerequisite. See the Master of Public Policy section, page xx. Requirements for this dual degree are listed in the USC Price School of Public Policy section (page xx).

Juris Doctor/Master of Social Work

Students are required to complete 123 units of course work, including 76 units in the Gould School of Law and 47 units in the USC School of Social Work.

First and Second Years: Complete both the first year J.D. program of study and the first year MSW course of study.

Third Year: Complete the second year J.D. program.

Fourth Year: Complete the core concentration courses (included SOWK 686a Field Practicum II) of the concentration selected in the MSW program, with the fourth course to be determined as part of the student's individualized educational plan approved by that concentration. The final semester will be taken in the J.D. program in the spring. The law school gives credit for the third semester in the School of Social Work, while the latter recognizes law courses as substitutions for three social work courses and one semester of field instruction (for which a clinical law semester is substituted).

Juris Doctor/Master of Arts, International Relations

The USC Gould School of Law and the USC School of International Relations jointly offer a three-year program leading to the J.D. and M.A. degrees. (Students may extend the dual degree program to four years.) Applicants must apply to both the law school and the School of International Relations and meet requirements for admission to both. In addition to the LSAT, students interested in this program are required to take the Graduate Record Examinations (GRE). Law students may apply to the School of International Relations during their first year at the law school.

In the first year, students take their course work in the law school exclusively. The second and third years include 24 units of courses in international relations and 40 units in law. Students pursuing the dual degree must complete LAW 662 or LAW 764 and one additional international law course.

Students pursuing the dual degree must complete 24 units within the School of International Relations at the 500 level or above. These students are required to successfully complete IR 500 International Relations Theory, either IR 513 Social Science and Historical Research Methods: Introduction to Research Design or IR 517 International Policy Analysis, and two domain courses selected from among IR 502 Conflict and Cooperation, IR 509 Culture, Gender, and Global Society, IR 521 Introduction to Foreign Policy Analysis, and IR 541 Politics of the World Economy. Like all other master's students, students in the dual degree program must complete a substantive paper or alternative project. The requirements, standards and evaluation procedure for the substantive paper are identical to those listed for all M.A. students except that one member of the examining committee must come from the law school.

Juris Doctor/Master of Arts, Religion and Social Ethics

Students must complete 20 units in the graduate School of Religion, plus 4 units of thesis.

First Year: Required law school curriculum.

Second and Third Years: Students will take any two of the three core courses in the School of Religion and a maximum of three elective courses from Areas I and II. Students may substitute the third core course for an elective course. LAW 508 Constitutional Law or such other law course as the schools agree may be substituted for one of the electives. Students must also complete 36 additional law units.

Juris Doctor/Master of Communication Management

Students must complete 20 units (five courses) of communication courses at the School of Communication: one core class from the student's preferred track; one method course; CMGT 597; and the remaining two courses may be from either core or elective offerings.

First Year: Required law school courses.

Second and Third Years: 20 units of communications courses and 38 units of law courses, of which 8 units must be approved as appropriate for acceptance by the Annenberg School for Communication and Journalism toward its degree. All students take CMGT 597 in the third year.

Application to pursue the dual degree should be made before completion of 15 units of work on law or 8 units toward the M.A. Admission by the law school to its J.D. degree will be evaluated as a substitute for GRE scores.

Juris Doctor/Master of Real Estate Development

The Juris Doctor/Master of Real Estate Development dual degree program provides the opportunity for in-depth study of legal issues and real estate development. The increasingly regulatory environment developers work within demands that professionals in the real estate industry have a strong understanding of the legal system. Lawyers who plan to specialize in real estate law will benefit from a thorough understanding of the development process, including financial, planning, marketing and design issues.

Application must be made to both the Gould School of Law and the USC Price School of Public Policy. This program normally requires three years (including one summer) of full-time study in residence to complete.

Students must have use of an approved laptop computer as required by instructors and must demonstrate calculator and spreadsheet skills; a calculator and/or spreadsheet class is offered online via the Internet.

Requirements for completion of the dual degree program are 112 units, including 78 units in law and 34 units in planning. For a complete listing, see Public Policy (page xx).

Juris Doctor/Master of Arts, Philosophy

Students must complete 24 units in the USC School of Philosophy and 69 units in the Gould School of Law.

First Year: Required law school curriculum.

Second and Third Years: The School of Philosophy prefers that students take at least one philosophy course each semester. During the four semesters, students must take at least 16 units at the 500 level, including PHIL 450 Intermediate Symbolic Logic and PHIL 500

Introduction to Contemporary Philosophical Literature; one 400- or 500-level course in ethics or social/political philosophy or aesthetics or philosophy of law; one 400- or 500-level course in metaphysics or epistemology or philosophy of language or philosophy of science or philosophy of mind; one 400- or 500-level course in the history of ancient or early modern philosophy; passage of the second year review, which shall include a research paper based on a completed seminar paper and completion of a publishable research paper. Students must also complete 36 additional law units.

Juris Doctor/Master of Arts, Political Science

The Department of Political Science and the Gould School of Law jointly offer a dual degree program leading to the J.D. and M.A. degrees. Applicants must apply to both the Department of Political Science and the law school and meet the requirements for admission to both. In addition to the LSAT, students interested in this program are required to take the Graduate Record Examinations (GRE).

In the first year, students take their course work in the law school exclusively. The second and third years include 24 units in political science and 40 units in law.

Like all other students in the political science M.A. program, students pursuing the dual degree must pass a master's screening examination in their field of choice. If they wish to write a master's thesis, they may do so in lieu of two courses.

Juris Doctor/Doctor of Philosophy in Political Science and International Relations

The Department of Political Science and the Gould School of Law offer a dual degree program leading to the J.D. and Ph.D. degrees. Applicants must apply to the Department of Political Science, the School of International Relations and the law school, and meet requirements for admission to all. In addition to the LSAT, students interested in this program are required to take the Graduate Record Examinations (GRE).

In the first year, students take their course work in the law school exclusively. To earn the J.D., all students (including dual degree students) must complete 35 numerically graded law units at USC after the first year. The associate dean may make exceptions to this rule for students enrolled in the law school honors programs. The second and third years include 40 units of courses in political science and 40 units of law. Students must take two methodology courses, POSC 500 and POSC 600, and three core courses to be selected from POSC 510, POSC 512, POSC 520, POSC 530 and POSC 540.

To obtain a Ph.D. in Political Science and International Relations, students must pass the screening process. After the completion of additional course work, students must take a Ph.D. qualifying examination in three fields. Students will be examined in two of their three fields of concentration. The third ("write-off") field will be completed by taking at least three courses and passing them with a grade of B or better. The final requirement, following successful completion of the qualifying examination, is a doctoral dissertation.

Other Graduate Courses

Students interested in combining an expertise in another discipline with the law degree may arrange

individually to take approved graduate courses for limited credit toward the law degree.

Students may receive up to 12 units for graduate work taken outside the law school with the prior permission of the administration. These units may be concentrated in a single appropriate discipline; they may not, however, be applied to another graduate degree in progress unless it is a certificate program offered by another department.

J.D. Study Abroad Programs

USC Gould offers five study abroad programs for J.D. students that provide opportunities to learn about foreign legal systems and to experience different cultures. Qualified second- and third-year J.D. candidates are exposed to international law as they take part in exchange programs with leading partner institutions worldwide.

University of Hong Kong: The semester exchange program at the University of Hong Kong (HKU) allows USC Gould J.D. students to experience Hong Kong and its legal culture and business in the Pacific Rim.

HKU was established in 1911 and is a leading university in Asia. It is linked with over 80 partner institutions in 15 countries and has exchange programs with prominent universities worldwide. The language of teaching at HKU for its law courses is English.

Bocconi University: USC Gould J.D. students have the opportunity to learn about law and business in Milan, Italy, in this semester exchange program with Bocconi University. An Italian course is available to interested exchange students who wish to study the language before the law program begins.

Bocconi University, a private institution in Milan, Italy, has a global reputation as a research university in business, economics and law. Bocconi offers its exchange students law courses in English. These include courses in international and European law, international trade law, and comparative business and corporate law.

University Jean Moulin Lyon 3: The semester abroad program at the University Jean Moulin Lyon 3 allows USC Gould J.D. students the chance to study in English at a leading law school in Lyon, France. After earning the J.D. degree, graduates may elect to return to Lyon for a semester to complete an LL.M. in international and European law.

The University Jean Moulin Lyon 3 is a public university ranked among the top in France. Lyon 3 is one of three universities in Lyon with a combined population of 100,000 students. Lyon is the second-largest city in France with a great selection of cultural and professional opportunities.

Bond University: USC Gould J.D. students have the opportunity to live in Queensland, on the Gold Coast of Australia, for a semester while studying at Bond University.

Bond University has a distinctly global perspective, aspiring to a 50:50 ratio of Australian to international students, who come from 80 countries worldwide. Under the guidance of Australia's most eminent legal professionals, internationally renowned criminologists and specialists, students benefit from the mentoring

relationship fostered at Bond where professors take an active role in charting student success.

Fundação Getulio Vargas University: The semester exchange with Direito GV, the law school of FGV, allows J.D. students to study at their campus in São Paulo, Brazil. Direito GV has one of the top law faculties in Brazil. They offer law courses in English for their exchange students.

Fundação Getulio Vargas has developed a highly innovative curriculum. The Brazilian Ministry of Education and Culture and the Brazilian Bar Association have granted FGV their highest classification of academic rigor. This exchange introduces J.D. students to the Brazilian legal system and promotes a broad debate on the issues of global relevance within a South American perspective.

Graduate Degree Programs

USC Gould's graduate degree programs include an LL.M. program and an MCL program for foreign law graduates. Through the graduate degree programs, students have opportunities to meet and interact with faculty and J.D. students and also with practicing lawyers from around the world.

Course Requirements

The LL.M. for foreign lawyers and MCL programs are intended for individuals who are trained in law abroad and wish to gain a basic knowledge of U.S. law and our legal system and/or who wish to engage in comparative legal study.

Certificate Programs

Certificate in Business Law

J.D. students must complete at least 27 units of business-related classes to receive this certificate. Interested J.D. students must submit their applications for this certificate program after completing the first year of law school. J.D. students complete the certificate requirements during their second and third years of law school, and courses may count both toward the J.D. degree and the certificate.

LL.M. students must complete at least 14 units of business-related classes to receive this certificate. LL.M. students complete the certificate requirements during the year they are taking their LL.M. course work, and courses may count both toward the LL.M. degree and the certificate.

All students are required to take both mandatory business law courses (such as business organizations) and a selection of elective business law courses (such as mergers and acquisitions, advanced contracts and bankruptcy).

Certificate in Entertainment Law

J.D. students must complete at least 21 units of entertainment-related classes to receive this certificate. J.D. students must submit their applications for this certificate program after completing the first year of law school. J.D. students complete the certificate requirements during their second and third years of law school, and courses may count both toward the J.D. degree and the certificate.

LL.M. students must complete at least 14 units of entertainment-related classes to receive this certificate. LL.M. students complete the certificate requirements during the year they are taking their LL.M. course work, and courses may count both toward the LL.M. degree and the certificate.

All students are required to take both mandatory entertainment law courses (such as intellectual property) and a selection of elective entertainment law courses (such as copyright, legal issues in music and sports law).

Undergraduate Programs

B.A. Philosophy, Politics and Law

This interdisciplinary program consists of nine courses chosen from philosophy, political science, law and anthropology courses. See Philosophy, page xx, for degree requirements.

Minor in Law and Public Policy

The minor in law and public policy draws upon four fields of study: public policy and management, law, economics and political science. It provides students with an understanding of the political and economic contexts in which laws are made, as well as how legal institutions shape policy formulation. Students learn to analyze the consequences of policy and alternatives; the roles played by government, business and non-profit organizations in public decision-making; and the legal bases for various areas of public policy. See Public Policy, page xx, for requirements.

Minor in Law and Society

This interdisciplinary program focuses on the effect of law on society and the way in which social forces influence the legal system. The idea is that students will understand the law if they look beyond "law in books" to "law in action." See Political Science, page xx, for requirements.

Minor in Psychology and Law

This interdisciplinary minor brings together courses in psychology that focus on the social, ethical, cognitive and societal aspects of psychology and how it relates to law. This knowledge is augmented with law courses that identify the relationship between mental health, social psychology and law. See Psychology, page xx, for requirements.

Courses of Instruction

LAW (LAW)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

Courses numbered 500 and above are open only to law students except by special permission from the associate dean.

LAW 200x Law and Society (4) Sources and structure of law; history of Bill of Rights emphasizing effect on criminal justice system; limits of law in solving problems in American society. Not available for major credit to law students.

LAW 201x Law and Politics: Electing a President (4) Examination of the rules and realities of American politics, and the role politics plays in American life and culture. Not available for major credit to law students.

LAW 300 Concepts in American Law (4) The main concepts and topics in American law, in the historical, economic and cultural contexts in which they have developed. Open only to students enrolled in the Philosophy, Politics and Law (PPL) major.

LAW 402 Psychology and Law (4, Sp) Explores issues of responsibility and credibility. Intentional and unintentional behavior. Clinical biases. Topics include witness credibility, confessions, cults, hostages, battered persons, and repressed memories.

LAW 403 Mental Health Law (4, Sp) Issues at the intersection of law and psychology, both civil — e.g., civil commitment — and criminal — e.g., the insanity defense. Emphasis on ethical issues.

LAW 404 Law and Psychology: Examining the Criminal Justice Process (4, FaSpSm) Examination of the capacity of the criminal justice process to produce accurate verdicts. Application of psychological research on witnesses, detectives, suspects, judges and jurors. *Recommended preparation:* PSYC 100.

LAW 444 Civil and Political Rights and Liberties (4) (Enroll in POSC 444)

LAW 450 Internet Law (4, FaSp) Basic issues of current Internet regulation, intellectual property rights, freedom of expression on the Internet, privacy, security, and jurisdiction and zoning as it relates to the Internet. *Prerequisite:* LAW 200.

LAW 502 Procedure I (4, Fa) Consideration of the participants in litigation — private and public plaintiffs, defendants, and courts. Information exchange, process, outcomes, and costs of lawsuits.

LAW 503 Contracts (2-4, Fa) The interpretation and enforcement of promises and agreements.

LAW 504 Criminal Law (3, Sp) The crime problem and the legislative response to it through substantive criminal law; administration of criminal justice through police, prosecutorial, sentencing, and penological discretion.

LAW 505 Legal Profession (2-4) Functions of the lawyer in modern society; history and organization of the legal profession; the adversary system; equal access to justice; other problems of ethics and professional responsibility.

LAW 507 Property (4, Sp) The idea of property as understood through economic and philosophical concepts. Rights in land, water and other natural resources. Forms of shared ownership (e.g., landlord and tenant), and a survey of mechanisms for controlling land use.

LAW 508 Constitutional Law I (2-5, FaSp) Considers the delineation of spheres of responsibility between the judiciary and legislature, the nation and the state, and the government and the individual.

LAW 509 Torts I (4, Fa) Individual's obligation not to harm others; bases for compensating persons who are harmed, either by holding responsible whoever is at fault or by invoking other principles of liability, including the efficiency of resource allocation and the spreading of losses.

LAW 510 Legal Research (0 or 1, FaSpSm) Examination of the basic sources of law for federal and California jurisdictions, utilizing a vast array of sources from books to computer-assisted research and analyzing research methodology and techniques. Graded CR/D/F.

LAW 511ab Legal Writing (a: 1-2, Fa; b: 1-2, Sp) Two-semester course focusing on developing analytic and communication skills. Lawyers will analyze legal principles and incisively apply them to facts. Graded CR/D/F.

LAW 512 Law, Language and Values (2-4) An introduction to legal interpretation and normative reasoning. Among the topics addressed are statutory and common law interpretation, the rule of law, externalities, and inequality.

LAW 515 Legal Research, Writing and Advocacy I (2-3) Development of legal research, writing and advocacy skills. Emphasis on objective legal writing, including memoranda, and researching case law through primary and secondary sources.

LAW 516 Legal Research, Writing and Advocacy II (2, Sp) Continuation of LAW 515. Development of legal research, writing, and advocacy skills. Emphasis on persuasive legal writing, including appellate briefs, and researching statutory and administrative law. Participation in a moot court program. *Prerequisite:* LAW 515.

LAW 520 Introduction to U.S. Legal System (2) The basic structure of government in the U.S., including the constitutionally mandated division of power in the federal government and the federal system of power sharing between state and federal systems. A comparative perspective on selected substantive and procedural matters, such as common law reasoning, jury trials, adversary process, and various aspects of civil procedure. Open to LL.M. students only.

LAW 521 Topics in American Law (1-4, FaSp) This course provides LL.M. and MCL students with a survey of various topics in American law, including criminal law, evidence, family law, constitutional law, torts, wills and trusts, administrative law and property law. Open to LL.M. and MCL students only.

LAW 522 Legal Writing Overview (3 or 4) Develops written analytic skills. Includes short exercises that progress to drafting legal memoranda. Teaches advocacy through drafting legal briefs and client letters. Graded CR/D/F.

LAW 568 The Rights of Groups (4) (Enroll in REL 568)

LAW 599 Special Topics (2-4, max 8)

LAW 600 Taxation (3 or 4) Federal tax statutes, technical issues and social problems involved in tax planning, tax litigation, and reform of the tax laws.

LAW 601 Advanced Legal Writing Practicum (2-4) Requires students to draft legal documents they were not exposed to in the first-year writing course, such as client letters, demand letters, and contracts.

LAW 602 Criminal Procedure (2-4, FaSpSm) Criminal procedure in the courts, and the regulation of law enforcement by the courts through rules of evidence and interpretation of the Bill of Rights.

LAW 603 Business Organizations (3-5, FaSp) Organization of economic activity — especially the modern corporation — as institutions of social power. The roles of managers, owners, and public regulatory agencies in shaping processes of decision-making.

LAW 604 Real Estate Transactions Problems (1, Fa) Selected problems to supplement LAW 605. *Corequisite:* LAW 605.

LAW 605 Real Estate Law and Business I (Transactions) (3-5, Fa) The land transfer process: arrangements between buyers and sellers, brokers, escrows, recorders, title companies. Real estate financing through mortgages and other land security devices.

LAW 606 Land Use Controls (3 or 4) The regulation of land development through planning, zoning, subdivision controls and private devices. Mechanisms for coordinating regional development and financing new urban infrastructure.

LAW 607 Gifts, Wills, and Trusts (3 or 4) Gratuitous transfer of wealth, especially the transmission of wealth from one generation to the next as a settlement of family affairs. Comparative analysis of the legal mechanisms of gifts, wills, and trusts. Introduction to problems of fiduciary administration.

LAW 608 Evidence (3 or 4) The purpose and character of trial. Problems of adversary presentation and the nature of proof. The basis for admission and exclusion of evidence in judicial proceedings.

LAW 609 Torts II (2 or 3) Remedies of the law for injuries to an individual's personal integrity or to his reasonable economic expectations, including the torts of misrepresentation, defamation, and assault.

LAW 610 Advanced Civil Procedure (2-4, Sp) This course will look at juries and judges as decision-makers during trials. As background, we will examine the constitutional rights to a civil and criminal jury trial, and then focus on such features of the jury as voir dire, peremptory challenges, instructions, deliberations and differences in perceptions. The scope of jury authority, including jury nullification, as well as various models for the proper role of the jury in our society.

LAW 611 Advanced Topics in Constitutional Law (1-4, max 8) Seminar for students who aspire to write publishable research articles or notes on constitutional law topics.

LAW 612 California Civil Procedure (2-4) Examines the California rules of civil procedure. Emphasizes California law, with some discussion of the differences between state and federal procedure.

LAW 614 Accounting for Lawyers (2 or 3) The lawyer's skills needed to understand the financial affairs of a business client.

LAW 615 Election Law (1-4) Consideration of legal regulation of the right to vote and otherwise to participate in the electoral process.

LAW 616 Restitution (3) Comprehensive study of restitution, the common law action for unjust enrichment. Addresses unjust enrichment as a freestanding wrong, not just as a remedy.

LAW 617 History of American Law (2 or 3) Explores the interaction of law, culture, and politics in American society from the Revolution through the New Deal.

LAW 618 Advanced Contracts (2-4, FaSp) Students work in groups using principles of contract design analyzing concrete cases based on actual events in transactions handled by a large commercial law firm.

LAW 619 Employment Law (2-4) Examination of the evolving role of work in our society and the nature and scope of legal regulation of the employment relationship.

LAW 620 Mortgage Law (2-4, Sp) Deals with the rights and remedies of mortgage lenders and borrowers after the mortgage loan has gone into default. *Recommended preparation:* LAW 605.

LAW 621 Gender Discrimination (1-4) Analysis of the constitutional and statutory debates about the meaning of equality, and the recognition and accommodation of difference.

LAW 622 Family Violence (2-4, Fa) Practical and theoretical aspects of legal practice in cases involving family violence, including both spousal violence and child abuse.

LAW 623 Family Law (3 or 4) Creating, regulating and dissolving family relationships. Explore moral and power relations among men, women, children and the state. Develop skills to help clients in families.

LAW 625 Remedies (3 or 4) Comparison of the remedial goals of contracts, torts, and property and the impact of procedural devices in law and equity. Damages, injunctions, specific performance and restitution. Remedial theory and transactional application.

LAW 626 International Arbitration (2-4, Fa) Steps in the arbitration process, attorney's functions in the process, relation of arbitration to national courts, policy issues, issues involved when governments are parties to international commercial disputes.

LAW 628 Real Estate Finance Problems (1, Sp) Selected problems to supplement LAW 629. *Corequisite:* LAW 629.

LAW 629 Real Estate Law and Business II (Finance and Development) (2-4, FaSp) A survey of the major types of financing used for real estate and the basic techniques used to make real estate investment and financing decisions. *Recommended preparation:* LAW 605.

LAW 630 Mediation Clinic I (2-4, FaSpSm) Students receive the training required to become professional mediators for civil cases in the L.A. County Superior Court, and mediate these cases.

LAW 631 Mediation Clinic II (2-4) Continuation of LAW 630. *Prerequisite:* LAW 630.

LAW 632 Business for Lawyers (2-4) This course introduces law students to the tools, concept, and language of business. It is premised on the belief that to excel as a business lawyer, one must understand the business world from the perspective of the clients one counsels and assists. The course will cover, in compressed form, the basic subjects from the MBA program which are most useful to lawyers.

LAW 633 Law and Economics (4) Employs economic reasoning to explain and provide a normative basis for the analysis of property, contract, tort and criminal law and the legal process. *Prerequisite:* ECON 500 or ECON 503.

LAW 634 Legal Analysis of Evidence (2-4) Legal analysis of the rules of Evidence using problems designed to improve analytic skills and problem-solving. Taken in conjunction with Evidence. *Corequisite:* LAW 608.

LAW 635 Employment Discrimination Law (2-4) Examines the regulation of employment discrimination under federal law. Pays primary attention to issues of race, sex, age and disability discrimination.

LAW 636 Labor Law (3 or 4) The interrelation of labor, business, and government in collective bargaining, federal regulation of union and management practices and pressures, especially through the Taft-Hartley Act.

LAW 637 International Trade Policy (1-4) Examination of the institutions and laws that regulate international economic relations. Students will be introduced to the major international agreements and national laws that regulate international trade goods, services and capital.

LAW 638 Topics in Alternative Dispute Resolution (2-4, max 6, Sp) Examines selected topics in negotiation, mediation, or alternative dispute resolution. May be repeated with permission of the instructor as topics vary. Graded CR/D/F.

LAW 639 Law and Literature (1-4, max 8) Selected topics in law and literature.

LAW 640 The United States Supreme Court (1-4) Introduction to the state of the art in legal and social-scientific work on the United States Supreme Court.

LAW 641 Commercial Law (2 or 4) Commercial transactions involving secured financing (other than land). Government regulation of such sales and borrowing through Article 9 of the Uniform Consumer Credit Code and other recent legislation.

LAW 642 Secured Transactions (2-4) This is a course on Chattel paper and secured transactions involving personal property under Article 9 of the Uniform Commercial Code and some related bodies of law.

LAW 643 Securities Fraud Litigation (2-4, FaSpSm) Examination of the laws governing fraud in securities markets. Focus on several sections of the Securities Exchange Act of 1934, including fraudulent statements and insider trading, fraud in the takeover context, fraud in proxies, and controlling personal liability.

LAW 644 Corporate Taxation (2-4) Tax principles and practice applicable to business, especially problems of formation, liquidation, and reorganization. *Prerequisite:* LAW 600.

LAW 645 Realities of Commercial Lending (1-4, FaSpSm) Involves issues including loan restructuring; what loan agreements cover; how representations, covenants, default and financial and repayment terms interrelate; and how security documents fit in. Graded CR/D/F. *Prerequisite:* LAW 642.

LAW 646 Advanced Topics in Employment Discrimination (1-3) Reviews recent Supreme Court decisions and legal scholarship with attention to statutory interpretation, consistency with constitutional antidiscrimination standards, and consistency with current understandings about discrimination.

LAW 647 Bankruptcy: Debtors and Creditors I (2 or 3) Bankruptcy of the poor, imprudent or unlucky, and of unsuccessful businesses. The mechanisms of our law for distributing the debtor's property and discharging his obligations.

LAW 648 Topics in Entertainment Law (1-4, max 8) Contemporary topics in the field of entertainment law.

LAW 649 Insurance (2 or 3) The pooling of risks and distributing of losses. Actuarial foundation and contract problems of insurance.

LAW 650 Entertainment Law (2-4, FaSp) An examination of how the courts are handling selected, "cutting edge" topics in entertainment law. The topics will include the scope of and limitations on the right of publicity; fair use and parody defenses to copyright infringement; future technology clauses in rights contracts; and copyright and defamation issues arising in the online world. Previous entertainment law courses recommended, but not required.

LAW 651 Entertainment Law Practicum (1-2, max 8, FaSpSm) Supervised internship for students enrolled in LAW 650. Graded CR/D/F. *Corequisite:* LAW 650.

LAW 652 Persuasion (2-3, Fa) Analysis and development of persuasive arguments using principles of persuasion; translation of the arguments into visual presentations using presentation models; persuasive presentation of visuals.

LAW 653 Legal Issues in the Music Industry (1-4, FaSp) The course will focus on contract drafting and negotiation issues relevant to an artist's pursuit of a career in the music business.

LAW 654 Legal Issues in the Television Industry (2-4) An in-depth study of television industry legal concepts, contracts, business structures and economic models.

LAW 655 Environmental Law (2-4) Focus on environmental law policy and practice. This course is a combination of regulatory and private law, with a special emphasis on disputes and regulations involving contamination in soil, water and air.

LAW 657 International Protection of Intellectual Property (1-4) The laws concerning how to enforce and exploit rights protecting media creations, marketing symbols, computer programs, new technologies, designs, know-how, and data across national borders.

LAW 658 Mergers and Acquisitions (1-4, Sp) Problems of integrating the corporate, securities, tax, business, antitrust, accounting and contractual aspects of corporate mergers and acquisitions. *Prerequisite:* LAW 603.

LAW 659 Legal Issues in the Motion Picture Industry (2-4) Involves the legal and business principles involved in structuring, negotiating and documenting agreements relating to the development, production and distribution of theatrical motion pictures. *Prerequisite:* LAW 650, LAW 772.

LAW 660 Trademark (1-4) A rigorous introduction to a law of trademarks. A trademark can be any word, symbol, design, sound, fragrance or product configuration that is used to distinguish the goods or services of one person from those of another, and to indicate the origin of the goods or services.

LAW 661 National Security Law (2-4) Examination of the nature of United States' national security law, focusing on how it is created, violated and enforced.

LAW 662 Public International Law (3-4) Principles of international law involving relations among governments. The function of international tribunals and organizations.

LAW 663 European Union Law (2-4, FaSpSm) Introduction to the EU legal system and an understanding of the functioning EU, constitutive treaties, and evolving judicial and regulatory system being established within Europe.

LAW 664 Globalization and Law (2-4) The impacts of globalization and legal reactions in a number of areas including constitutional law, trade law, military law and the environment.

LAW 665 Art Law (2 or 3) Provides an overview, often from a litigation perspective, of legal issues affecting artworks and cultural property.

LAW 667 Hale Moot Court Brief (2) Invitation-only course offered to second-year students as part of the Hale Moot Court Honors Program. Students write an appellate brief. Open only to students in J.D. program (including dual degrees).

LAW 668 Hale Moot Court Oral Advocacy (1, Sp) Invitation-only course for students in the Hale Moot Court Honors Program. Students present an oral argument and judge first-year student rounds. Graded CR/NC. *Prerequisite:* LAW 667.

LAW 669 Moot Court Supervision (1-3, max 6, FaSp) Evaluation and supervision of the preparation of briefs and oral arguments in the Hale Moot Court honors competition. Graded CR/D/F.

LAW 670 Advanced Moot Court Oral Arguments (1-3, max 3, Sp) Preparation of oral arguments in approved moot court competitions, such as national and state prize rounds (other than Hale Moot Court Program). Graded CR/D/F.

LAW 671 Advanced Moot Court Briefs (1-3, Sp) Preparation of briefs in approved moot court competitions, such as national and state prize rounds (other than Hale Moot Court Program).

LAW 672 Jessup Moot Court Briefs (1-3, Fa) Students prepare for competition by writing a brief on the issues in a problem that is the basis for the Jessup International Moot Court Competition. Participation is by faculty selection only.

LAW 675 Mental Health Law (2-4) Studies the important issues at the intersection of law and psychology/psychiatry, both civil and criminal.

LAW 677 Quantitative Methods in the Law (2-4, FaSp) Introduces students to basic principles of descriptive and inferential statistics, probability, and valuation.

LAW 678ab Review of Law and Social Justice Staff (1-4; 1-4) Writing, source-checking, and preliminary editing of articles and comments for publication in the *Review of Law and Social Justice*. For second-year students serving as staff members on the *Review*. Graded CR/D/F.

LAW 679 Review of Law and Social Justice Writing (1-4, max 4) Writing, source-checking, and preliminary editing of articles and comments for publication in the *Review of Law and Social Justice*.

LAW 680ab Review of Law and Social Justice Editing (1-3; 1-4) Supervision of research and writing, and final editing of articles and comments for publication in the *Review of Law and Social Justice*. For officers of the *Review*. Graded IP to CR/D/F.

LAW 681 Analytical Methods for Lawyers (2-4) Teaches important business and economic concepts that will assist with problems lawyers in every practice area routinely encounter.

LAW 682 Jessup Moot Court Oral Arguments (1, Sp) Students prepare oral arguments on the issues in a problem that is the basis for the Jessup International Moot Court competition. Participation is by faculty selection only. Graded CR/D/F. *Prerequisite:* LAW 672.

LAW 683 Client Interviewing and Counseling (2, 3, FaSp) Introduction to a practice-oriented approach to interviewing and counseling clients. Enables students to develop a useful framework for effectively interviewing and representing clients.

LAW 684 Suing the Government (2-4, FaSp) Deals with suits against federal and state governments. Intended for aspiring government workers or representatives of plaintiffs who sue a government official or entity.

LAW 685 Civil Discovery (2-4) Focuses on the discovery phase of pre-trial litigation and many of the skills new lawyers are called upon to use right out of law school.

LAW 697 Foreign Relations and National Security Law (2-4, FaSp) This course will examine the statutory, constitutional, and international legal structures that form the base of American diplomacy.

LAW 700 Health Care Regulations (1-4) Regulation of the medical profession; the physician-patient relationship; professional and institutional liability; health care institutions and delivery systems; quality control; access to health care services and problems of distribution and rationing; cost control, including government and private health care programs; patient rights; antitrust.

LAW 701 Child Interviewing Seminar (1-4) Students learn how to effectively interview child witnesses. Students will practice mock interviews, and may be eligible to conduct actual interviews of child witnesses.

LAW 702 Children, Sexuality and the Law (2-4) Explores laws designed to protect children from sexual abuse and exploitation, with a limited emphasis on foreign and international law for comparative perspective.

LAW 703ab Children's Legal Issues (1-4; 1-4) Students will work on cases in the following areas: (1) Dependent and neglected children: All children who are wards of the court must have legal counsel. (2) Children with AIDS: Legal implications of such issues as health care and custody. (3) Guardianships or other temporary arrangements for children whose parents are terminally ill or are otherwise unable to care for them. Graded CR/D/F.

LAW 704 Poverty Law (2-4, FaSp) An introduction to the problem of poverty in the United States and to the response of government and the legal system to the problems of the poor.

LAW 705 Community Property (1-3) The law of community property, including disposition of property on dissolution of the marriage and questions of conflict of laws. May be offered as a reading course.

LAW 706 Public Health Law (2, 3, 4) Provides an introduction to the legal foundations of the public health system in the United States.

LAW 707 Global Health, Law and Human Rights (1-3) Highlights the complex interactions between health, law and human rights, emphasizing the use of human rights in public health thinking and practice.

LAW 708 Reviewing and Negotiating Business Contracts (2-4, FaSp) Covers the fundamentals of reviewing and analyzing business contracts and strategies for negotiating business issues with an emphasis on developing practical skills.

LAW 709 Contract Drafting and Negotiation (2-4, FaSp) Contract Drafting and Negotiation will teach students the mechanics of drafting and negotiating sophisticated contracts from a variety of legal disciplines including entertainment law, real estate law and general corporate law.

LAW 710 Contract Drafting and Strategy (2, 3) Students examine contracts and present to the class their assessment of why the specific provisions were drafted and possible alternatives and challenges to those provisions.

LAW 711 Access to Justice Practicum (2-4) Real world advocacy projects involving issues such as civil rights, disability rights, foster care, welfare, and health care, among others.

LAW 712 Negotiation and Mediation Advocacy (2 or 3, FaSp) Develops enhanced negotiation skills and a working understanding of ADR processes and procedures in an interactive classroom experience. (Duplicates credit in LAW 638.) Graded CR/NC.

LAW 713 International Human Rights (2-4, FaSp)

This course will address the international law and institutions which have developed since World War II for the protection of human rights.

LAW 714 U.S. Foreign Policy and International Law (1-4)

Discusses current U.S. foreign policy challenges and the underlying international legal issues and principles which shape them.

LAW 715 Law and Policy of Alternative Dispute Resolution (2-4)

Exploration of the origin, development, and practice of mediation, arbitration and other forms of ADR, emphasizing the policies underlying these increasingly significant and evolving areas.

LAW 716 Race and Gender in the Law (1-4)

Investigates the experience of women and people of color as they have encountered legal institutions and processes.

LAW 717 Estate Planning (3, FaSp)

Legal and tax considerations important to the lawyer advising his client on the transmission of wealth from one generation to the next.

LAW 718 Sports Law (1-4, Sp)

Sports law is a blend of contract, labor, antitrust, agency, tax, intellectual property, tort, civil rights and constitutional law.

LAW 719 Corporate Finance (3 or 4)

Legal and economic aspects of corporate finance including capital structure, policy, mergers, takeovers, and freeze-outs; analysis of policy relating to present law and possible reforms.

LAW 720 Topics in Corporate Law (1-4, max 8, FaSp)

Executive malfeasance, shareholder rights, securities class actions, asset securitizations, hedge fund regulation and corporate social responsibility from a theoretical and corporate finance framework.

LAW 721 Class Actions (2)

Studies the theory and practice of class action litigation in the United States.

LAW 723 Law, Literature and Feminism (1-4, FaSp)

Looks at the interweaving of the culture wars, feminism and law, with a particular focus on questions of choice, marriage, and the family.

LAW 724 International Finance (2-4, FaSp)

An examination of international aspects of U.S. securities and banking law, capital markets and regulations, Eurobonds, Futures and Options, asset securitization, swaps and project finance.

LAW 725 Bioethics and Law (3)

Legal, ethical and economic problems of advanced biological technologies, for example, behavior, genetic, and reproductive control; control of the processes of dying; organ transplantation and the use of artificial organs; regulation of scientific research and human experimentation.

LAW 726 Stereotypes, Prejudice, and the Rule of Law (2-4, FaSp)

An examination of the role of race (and other markers of social marginality) in the administration of justice in American courts.

LAW 727 Partnerships and Limited Liability Companies (2-4, FaSp)

Deals with the formation, features and functions of general partnerships, limited partnerships and limited liability companies. Also focuses on business planning, recognizing business and legal objectives and selecting the appropriate entity to accomplish these objectives.

LAW 728 Topics in Amateur Sports Law (1 or 2)

Focuses on the legal and institutional regulation of high school and collegiate sports and the business transactions that are an integral part of collegiate sports.

LAW 729 Business and Legal Components of the Sports Partnership Deal (1-4)

Provides skills that enable students to create savvy partnership ideas and advocate on behalf of a corporate sponsor or sponsored entity in the sports industry.

LAW 730 Immigrants and the Constitution (2-4, FaSp)

A focus on the constitutional rights of non-citizens. The course will explore the role of immigrants and immigration in American history.

LAW 731 Gender, Crime and Justice Seminar (2-4, FaSp)

Analyzes various criminal justice issues with a focus on the questions of how gender may shape and inform those issues.

LAW 733 Corporate Reorganization (2 or 3)

Reorganization of failing corporations under Chapter XI of the Bankruptcy Act. Claims, protective committees, plans, tax considerations.

LAW 734 Local Government Law (3 or 4)

Study and evaluation of the municipal and regional legal institutions. Emphasis on the crises in financing and governing the urban society.

LAW 735 Employer Legal Advice Clinic (2-4, Sp)

Provides legal advice to clients in the area of employment law. Graded CR/D/F. *Prerequisite:* LAW 619.

LAW 736 Small Business Clinic I (2-4, FaSpSm)

Students provide legal assistance to small businesses, entrepreneurs and non-profit organizations that cannot pay market rates for legal services. Graded CR/NC.

LAW 737 Small Business Clinic II (2-4, Sp)

Continuation of Small Business Clinic I. *Prerequisite:* LAW 736.

LAW 738 Civil Rights Litigation (2-4, FaSp)

An examination of issues of class action and other impact civil rights litigation with an emphasis on federal court practice.

LAW 741 Sentencing Law, Practice and Policy (2-4, FaSp)

This seminar will explore the law, purposes and practices of sentencing. Students will study and compare the different systems of sentencing and the procedures by which sentences are imposed. Students may also examine some actual pending criminal cases.

LAW 742 Criminal Law Motion Practice (2-4, FaSp)

This course instructs students on the law and strategy concerning most major criminal case motions. Students will draft and argue motions based on actual cases.

LAW 743 Federal Criminal Law (2-4, max 8)

Covered topics include offenses relating to fraud and political corruption, terrorism, narcotics, money laundering, organized crime, false statements and obstruction of justice.

LAW 744 Comparative Islamic Law (2-4, FaSp)

Course will cover basic principles of Islamic transactional laws as adapted and incorporated into contemporary Islamic countries. Laws will be compared with U.S. and California.

LAW 745 Comparative Constitutional Law (2-4, FaSp)

Comparison of the U.S. Constitution with constitutions in other nations. Exploration of differences in structure and substance, with a focus on how nations address pluralism.

LAW 746 Critical Race Theory (2-4)

Intersectionality, destruction and critical historiography; specifically affirmative action in education, hate speech and immigration reform.

LAW 747 Constitution in the 20th Century (2-4)

This course examines the impact of historical events, world wars, the Cold War, and civil rights, and understanding the role of the Constitution in American life.

LAW 748 Topics in Constitutional Law and Religious Ethics (2-4, FaSp)

This seminar will discuss religious views about the meaning and nature of human existence and address contested contemporary issues of constitutional law.

LAW 749 Securities Regulation (2-4, Sp)

Regulation by state and federal agencies of issuance of, and trading in, stocks, bonds, and other securities. Particular reference to SEC regulations.

LAW 750 Choice of Law (2, 3)

Introduces students to the doctrines of choice of law. This field determines which state's law applies when events causing disputes happen in several locations.

LAW 751 Sexual Orientation and the Law (2-4, FaSp)

Explores the ways in which American law has responded to the diversity that exists within human sexual orientation.

LAW 753 Antitrust Law I (3 or 4)

Laws designed to preserve and promote business competition, with heavy emphasis on the federal antitrust laws.

LAW 754 Antitrust and Intellectual Property Law (2-4)

Covers the interface between antitrust law and intellectual property law.

LAW 757 Sex, Gender and the Law (1-4, FaSp) Explores law's response to questions of sex discrimination and gender identity and expression, with emphasis upon legal issues facing transgender and intersex persons.

LAW 758 Identity Categories (2-4, FaSp) Drawing on feminist legal theory, critical race theory, and lesbian/gay/bisexual and queer theory, this seminar will explore the treatment of identity categories in United States law.

LAW 760ab Interdisciplinary Law Journal Staff (1-1 or 2, FaSp) Source-checking and preliminary editing of articles and comments for publication in the *Interdisciplinary Law Journal*. For third-year students serving as staff members on the *Journal*. Graded a: IP to CR/D/F; b: CR/D/F.

LAW 761 Interdisciplinary Law Journal Writing (1-4, max 4, FaSp) Students will write journal notes as members of the *Interdisciplinary Law Journal*.

LAW 762ab Interdisciplinary Law Journal Editing (1-3, Fa; 1-3, Sp) Supervision and final editing of articles and comments for publication in the *Interdisciplinary Law Journal*. Graded IP to CR/D/F.

LAW 763 Federal Courts: The Federal System II (3-5, FaSpSm) Problems of adjudication in a federal system. Allocation of authority between federal and state courts and among Congress, the Executive and the Courts; choice of federal and state law; jurisdiction of federal courts and significant rules of practice.

LAW 764 International Business Transactions (3 or 4) Survey of legal aspects of international trade and investment transactions, including tax considerations.

LAW 765 Topics in Intellectual Property Law (1-4) Analyzes selected contributions to intellectual property scholarship and explores some challenging problems in contemporary intellectual property law.

LAW 766 Writing for Publication Seminar (1-4, max 8, FaSp) Special seminars to provide a forum for students who wish to produce a paper for academic publication to receive guidance and feedback.

LAW 767ab Law Review Staff I (1-1 or 2) Writing, source-checking, and preliminary editing of articles and comments for publication in the *Southern California Law Review*. For second-year students serving as staff members on the *Review*. Graded CR/D/F.

LAW 768 Law Review Writing (1-4, max 4) Writing, source-checking and preliminary editing of articles and comments for publication in the *Southern California Law Review*.

LAW 769ab Law Review Editing (1-3, FaSp) Supervision of research and writing, and final editing of articles and comments for publication in the *Southern California Law Review*. For officers of the *Review*. Graded IP to CR/D/F.

LAW 771 Intellectual Property and Technology Law Clinic I (1-5, max 8, Fa) Provides law students with the ability to represent clients (under the supervision of the professor) in cutting-edge issues of intellectual property and technology law. *Corequisite:* LAW 772.

LAW 772 Intellectual Property (2 or 3) The protection of intellectual property and encouragement of creativity. Explores copyright, trademarks, patents, and selected state law theories.

LAW 773 Internet Law (2-4, Fa) Integration of cyberspace and the Internet into existing legal structures. Topics include: First Amendment issues; intellectual property, privacy and child protection; criminal activity and governance and jurisdictional activities.

LAW 774 Rights of Groups Seminar (2 or 3, FaSp) Explores the place of groups (such as racial and ethnic groups, labor unions, family, neighborhood, class and religious groups) in the legal order governed and protected by the Constitution. Asks whether groups have rights comparable in stature to the rights of persons, and, if they do, how conflicts between the group rights and individual rights should be adjudicated.

LAW 775 Immigration Law (2-5) The development of immigration law to its present state.

LAW 776 Immigration Clinic I (2-4, FaSpSm) Students represent clients before Immigration and Customs Enforcement, the Immigration Court, and certain law enforcement agencies in cases including applications for relief under the Violence Against Women Act, for asylum, and for relief against deportation.

LAW 777 Administrative Law and Regulatory Policy (1-4) Legal principles subject to judicial control and the alternative ways in which agencies can be organized to serve their purposes.

LAW 778 Sales (2-4, FaSp) Analysis of the buying and selling of goods both in domestic and international transactions with a heavy focus on Article 2 of the Uniform Commercial Code.

LAW 779 Regulated Industries (2-4) Provides students with an understanding and an appreciation of regulated industries.

LAW 780 Intellectual Property and Technology Law Clinic II (2-4, max 4, Fa) Continuation of LAW 771. *Prerequisite:* LAW 771.

LAW 781 Clinical Internship/Externship I (1-13, FaSpSm) A clinical internship or judicial externship allows a student to gain hands-on legal experience in legal settings. Students will be assigned to a legal services program, government agency, or state or federal judge under faculty supervision. Graded CR/D/F.

LAW 782 Clinical Internship/Externship II (1-13, FaSp) Advanced clinical training/externship. Graded CR/D/F.

LAW 787 International Sales of Goods (2-4)

LAW 789 Dissertation (1-4) Students should register for 2 to 4 units of dissertation to engage in supervised research and writing that is expected to result in a paper of publishable quality. Any regular, full-time member of the faculty (including full-time visitors) may supervise students in this course upon agreement by the faculty member and the student. Other persons who teach in the J.D. program may supervise dissertation only upon approval of the Board of Review. A one unit registration for dissertation will be available only where the unit is to be added to the course where a paper is already required, in recognition that the student's paper will require substantially more work than that expected of other students in the course. Students may take a total of 4 units of dissertation during their educational experience at the law school.

LAW 792 Law and Philosophy (2-4, max 8, FaSp) Examination of the best scholarly work currently done by legal, moral and political philosophers in the country.

LAW 793 Law and Economics Seminar (1-4, max 8) Key concepts and cutting-edge research in law and economics. Workshops with leading scholars from around the country.

LAW 795 Law of the Political Process (2-4, max 8) Examines the state and federal laws regulating the political process and related Constitutional issues.

LAW 796 Immigration Clinic II (2-4, Sp) Continuation of LAW 776. *Prerequisite:* LAW 776.

LAW 797 Public Policy in Law: Analysis and Advocacy (1-4) Focuses on contemporary policy problems, identifies relevant legal issues and utilizes multidisciplinary techniques found in law, political science, economics and history to formulate positions.

LAW 798 Law, Mental Health and Ethics (2-4, max 8, FaSp) Focuses on one or two topics per year at the intersection of law, mental health and ethics and explores them from an interdisciplinary perspective.

LAW 801 Venture Capital Law and Finance (2) Introduces students to the unique legal and financial aspects of the venture capital industry and the skills needed to represent entrepreneurs and venture capital investors. *Prerequisite:* LAW 603; *corequisite:* LAW 681 or LAW 719.

LAW 809 Deposition Strategies and Techniques (2, 3) Emphasizes strategies and tactics in asking and objecting to questions at a deposition in a civil case. Students will conduct mock depositions.

LAW 810 Patent Law (2 or 3, Sp) Patent laws, litigation, and the process of prosecuting the patent application. The concept of invention and ownership of rights under patents.

LAW 811 Law and Medicine (2-4, max 8) Explores the "social determinants of health," including medical, legal, social, environmental, and behavioral factors affecting the health of individuals and communities, especially poor, vulnerable populations.

LAW 815 Deals (3-4) Examines the collaboration between business people aiming to accomplish a goal and lawyers translating their business objectives into contract language to achieve the goal.

LAW 820 Pretrial Advocacy (3 or 4) Examines conceptual and practical aspects of interviewing, counseling, negotiation, settlement, drafting, and formal advocacy in the handling of legal cases.

LAW 821 Trial Advocacy (3 or 4, FaSp) Examines decision-making by counsel in the litigation of cases. Emphasis is given to decisions involving tactics and strategies and their implications for the functioning of legal institutions and substantive doctrine. Extensive use of simulated trial practice exercises.

LAW 823 Statutory Interpretation (2 or 3) Examines the change and evolution of law to discover its political roots and the ways policy making branches work to make and implement law.

LAW 827 Counseling the Startup Company (2-4, Sp) Role of the attorney in startup firms: business plan, employment agreements, lease, stock option plan, financing documents and distribution and strategic partnership arrangements.

LAW 839 Copyright (2-4) Study of federal copyright law, analysis of property rights and interests created thereunder. Manner in which these rights can be exploited in the various entertainment media. *Prerequisite:* LAW 772.

LAW 840 Copyright and Fictional Characters (2-4) Involves the treatment of fictional characters by the courts and in new media and the fundamental copyright concepts that have shaped that treatment.

LAW 842 Partnership Taxation (2-4)

LAW 843 Tax Policy Seminar (2-4) Students will write and present papers discussing topics in tax policy.

LAW 849 International Human Rights Clinic I (4-5) Students work under close faculty supervision on cases and projects that involve the application of international law to address human rights violations.

LAW 850 International Human Rights Clinic II (4 or 5) Continuation of the International Human Rights Clinic. *Prerequisite:* LAW 849.

LAW 851 Topics in Criminal Law and Criminology (1-4, max 8, FaSp) Selected topics in criminal law or criminology. May be repeated with permission of the instructor as topics vary.

LAW 855 Topics in Maritime and Admiralty Law (2-4, max 6, FaSp) Taught in honor of James Ackerman, USC Law graduate of 1948, this class examines selected topics in maritime and admiralty law. May be repeated with permission of the instructor as topics vary.

LAW 856 Transnational Human Rights Litigation (1-4, Fa) Provides an introduction to the legal and political issues raised by cases involving international human right violations.

LAW 859 Regulation of Telecommunications (2-4, FaSp) Concentration on the regulation of broadcast television, cable television, telephone, and spectrum management.

LAW 861 International Law Seminar (2-3, max 6, Sp) Investigation of selected problems of international law. May be repeated with permission of the instructor as topics vary.

LAW 862 Iraqi Refugee Assistance Project Seminar (1-4, max 8) Formally instructs students on U.S. and international refugee law and policy regarding the Iraqi refugee humanitarian crisis. Graded CR/D/F.

LAW 863 International Negotiations and Mediation (2-4) Introduction to negotiation and mediation from an international perspective. Development of essential skills for effective client representation in negotiation and mediation.

LAW 864 International Insolvency (1-4) Deals with multi-jurisdictional insolvency. Examines the insolvency laws of several different countries as well as Chapter 15 of the U.S. Bankruptcy Code and other issues.

LAW 866 Homeland Security and Counterterrorism Law and Policy (2-4) Explores the spectrum of interrelated legal and policy issues known as "homeland security" since the events of September 11, 2001.

LAW 867 Corporate Fraud (2-4, FaSpSm) Introduces law students to the real world issues of major civil and criminal corporate fraud.

LAW 868 Business Enterprise Taxation (2-4, FaSp) Examination of the taxation of corporations, partnerships, and limited liability companies.

LAW 870 Legal Writing Fellows (1-4, max 7, FaSpSm) Assist in teaching writing and advocacy. Responsibilities include helping prepare lesson plans and drafting writing assignments and sample answers; leading class exercises; and judging first-year moot court practice rounds. Graded CR/D/F.

LAW 871 First Amendment (2-4, FaSp) Freedom of expression (political speech, symbolic expression, obscenity, commercial speech, defamation), rights of access to the media, religious protection and prohibition of establishment of religion.

LAW 872 Advanced Legal Writing and Advocacy: Appellate Advocacy (1-4, FaSp) Students will research, write, and rewrite an appellate brief and may work on motions and oral advocacy as well.

LAW 873 Judicial Opinion Writing (2-4) Students write a majority opinion and a dissenting opinion based on cases pending before the U.S. Supreme Court. This is a writing-intensive course.

LAW 874 Media Law in the Digital Age (1-3) Explores the interplay between the law, politics, and media, particularly mass media, in the digital age.

LAW 875 Theories of Constitutional Interpretation (1-4) Seminar course devoted to different methods of reading the Constitution.

LAW 877 Major Trends in American Legal Thought (1-3) Survey of major trends in American legal thought.

LAW 878 Evolutionary Game Theory and the Law (1-3) Uses the Evolutionary Game Theory methodology to explore the dynamics of cooperative interaction among people, and the role that legal punishment plays.

LAW 884 Constitutional Law: Equality and Liberty (3-4) Focuses on individual rights and liberties, with special attention paid to equal protection and substantive due process.

LAW 886 Justice and the Foundations of Liberalism (1-4) Discusses John Rawls' *A Theory of Justice* (1971), critical reactions to it and some possible extensions of Rawls' theory of justice.

LAW 887 Law and War in 20th Century America (1-3) Examines the experience of war during the 20th century and the impact on American law, particularly the relationship between national security and individual rights.

LAW 888 First Amendment: Law and Religion (1-3) Explores the laws that govern and affect religious groups and religious belief-systems and religious experience in the United States.

LAW 889 Law Informed by Faith (2-4) Considers the role of faith in a lawyer's life and work. Discusses issues in constitutional law, tort law, criminal law, professional responsibility and more. (Duplicates credit in LAW 748.)

LAW 890 Directed Research (1-4) Directed Research may be taken only with the approval of the Administrative Board. This course is intended for substantial independent research and study that does not result in a paper of publishable quality. It includes, but is not limited to, preparation of research memoranda for faculty research projects, empirical research for such projects, and supervised independent study. Directed research is to be supervised by a regular, full-time faculty member (including full-time visiting faculty). Students may take a maximum of 4 units of Directed Research during their educational experience at the law school.

LAW 891 Post-Conviction Justice Seminar I (1-5, max 5, Fa) Examines the substantive rights of federal prisoners with respect to parole, sentencing, validity of conviction and conditions of confinement and the procedural mechanisms by which to enforce those rights. Under faculty supervision, students provide legal assistance to federal inmates in administrative and judicial proceedings. Graded CR/D/F.

LAW 892 Post-Conviction Justice Seminar II (1-5, max 5, Sp) Continuation of LAW 891. *Prerequisite:* LAW 891.

LAW 893 Advanced Clinical Training (1-5, max 10, FaSp) For third-year students who wish to continue their clinical training.

Keck School of Medicine of USC



In 2013 USC launched the university-wide Regenerative Medicine and Stem Cell Research Initiative, supporting interdisciplinary collaboration and clinical applications in cancer research, neural and sensory research, musculo-skeletal research and others. Here Ph.D. candidate Yvonne Leung works with Assistant Professor of Pathology Krzysztof Kobiela at the Eli and Edythe Broad CIRM Center for Regenerative Medicine and Stem Cell Research at USC.

Founded in 1885, the Keck School of Medicine of USC is part of Keck Medicine of USC, a major center of medical research, education and patient care with more than 1,500 full-time faculty members and a voluntary faculty of more than 4,000 physicians. Faculty includes national leaders in each of its 25 clinical and basic science departments. Located on the university's 30.8-acre Health Sciences Campus three miles northeast of downtown Los Angeles, the Keck School is adjacent to the Los Angeles County+USC Medical Center, one of the largest teaching hospitals in the United States.

The Keck School's faculty, students and residents serve more than one million patients each year through the Los Angeles County+USC Medical Center, the USC Norris Cancer Hospital, the Keck Hospital of USC, Children's Hospital Los Angeles, and a network of USC-affiliated hospitals throughout Southern California. More than 500 faculty physicians care for patients with complex medical needs as well as provide primary care.

The new Eli and Edythe Broad CIRM Center for Regenerative Medicine and Stem Cell Research of USC, which opened in the fall of 2010, joins the Harlyne J. Norris Cancer Research Tower and USC Zilkha Neurogenetic Institute in providing state-of-the-art facilities for important scientific discovery. With more than \$248 million in total federal research support, the Keck School ranks among the top U.S. medical schools in federal funding.

The Keck School of Medicine of USC is at the forefront of medical education and was among the first medical schools to adopt Introduction to Clinical Medicine courses for first-year students, providing direct experience in patient care from the start.

Administration

Carmen A. Puliafito, M.D., MBA, *Dean, May S. and John Hoover Dean's Chair in Medicine*

Coreen Rodgers, MBA, *Chief Operating Officer*

Thomas A. Buchanan, M.D., *Interim Vice Dean, Research*

Henri R. Ford, M.D., MHA, *Vice Dean, Medical Education*

Judy Garner, Ph.D., *Vice Dean, Faculty Affairs*

D. Brent Polk, M.D., *Vice Dean, Clinical Affairs (CHLA)*

Stacey Bratcher, J.D., *Associate General Counsel for Health Sciences*

Raquel D. Arias, M.D., *Associate Dean, Admissions*

Glenn Ault, M.D., *Associate Dean for Clinical Administration (LAC+USC Medical Center)*

Ronald Ben-Ari, M.D., *Associate Dean, Continuing Medical Education, and Assistant Dean, Curriculum*

Melany Duvall, B.A., *Senior Associate Dean and Assistant Vice President for Health Sciences Development*

Donna D. Elliott, M.D., Ed.D., *Associate Dean, Student Affairs*

Inderbir Gill, M.D., *Associate Dean, Clinical Innovation*
Stephanie Hall, M.D., *Associate Dean, Clinical Affairs (LAC+USC Medical Center)*

Deborah Johnson, Ph.D., *Associate Dean, Graduate Affairs (Ph.D. Programs)*

Elahe Nezami, Ph.D., *Associate Dean, Graduate Affairs (Undergraduate, Master's and Professional Degree Programs)*

Lawrence M. Opas, M.D., *Associate Dean, Graduate Medical Education*

Michele T. Pato, M.D., *Associate Dean, Academic Scholarship*

Stuart P. Swadron, M.D., *Assistant Dean, Pre-health Undergraduate Studies*

Pamela Schaff, M.D., *Associate Dean, Curriculum*

Althea M. Alexander, *Assistant Dean, Student Diversity*
Stanley P. Azen, Ph.D., *Assistant Dean, Research Integrity*

David Baron, M.S.Ed., D.O., *Assistant Dean, Global Relations*

Joyce Richey, Ph.D., *Assistant Dean, Educational Affairs*

Frank R. Sinatra, M.D., *Assistant Dean, Faculty Development*

Darcy Spicer, M.D., *Assistant Dean, Clinical Research Studies*

Sajaad Yacoub, M.D., *Assistant Dean, Student Affairs*

Admissions

Doctor of Medicine

Keith Administration Building 100B

1975 Zonal Avenue, Los Angeles, CA 90089-9021

(323) 442-2552

FAX: (323) 442-2433

Associate Dean, Admissions: Raquel D. Arias, M.D.

The Keck School of Medicine of USC Committee on Admissions is responsible for selecting members of the entering class. The committee comprises both faculty and students. The committee reviews candidates whose academic achievement, commitment to service and personal qualities distinguish them from the many thousands of applicants who apply.

The applicant's undergraduate major may be in any subject area from an accredited college or university. Although sound preparation in the basic sciences is essential, a background in the humanities, and depth and breadth of personal experience are also important.

General Admissions Information

All applicants must submit a supplemental application. The Keck School of Medicine of USC receives approximately 7,700 applications per year. Approximately 700 applicants receive interview invitations, which take place on the Health Sciences Campus. The interview day consists of a tour, lunch with medical students and two 45-minute interviews with one faculty member and one medical student. Interviews begin in mid-September and end in early March. Students receive acceptance letters beginning in October. Applicants placed on the alternate list may send additional information to update their files.

Requirements

All applicants to the Keck School of Medicine of USC M.D. program must complete a minimum of four full years or 120 semester hours of academic work at an accredited college or university by the time of matriculation. Applicants are strongly encouraged to complete all basic science requirements by the time of application. Required courses include two semesters, with associated labs, in biology, general chemistry, and physics.

Applicants must complete one semester of organic chemistry with a lab component. In addition, applicants must complete a course in molecular biology and an additional 30 semester hours in a combination of social sciences, humanities and English composition courses. USC recommends that applicants take statistics and Spanish courses. The MCAT is required, and scores must be from within the previous three years of the date of matriculation.

International students must take at least one year of study in the United States prior to application; credits from abroad must be certified by a U.S. college both as to number of hours and course content. Individuals who have discontinued studies in medical school for academic reasons are not eligible to apply to the Keck School of Medicine of USC.

Medical College Admission Test (MCAT)

The MCAT is required of all applicants. Applicants are strongly urged to take the MCAT early in the year of application. Applicants to the 2014 entering class are required to take the MCAT no earlier than August 2011 and no later than August 2013. Scores from earlier administrations of the examination will not be accepted.

Applications

The Keck School of Medicine of USC participates in the American Medical College Application Service (AMCAS). AMCAS reproduces and distributes an application and standardized academic record to participating medical schools designated by the student. The fee charged for this service depends upon the number of schools to which an application is sent. Applications may be obtained from its Website (aamc.org).

Applications are available after June 1 for the class entering in August of the following year. Applications to USC must be returned to AMCAS before November 1, but earlier application is encouraged. The Keck School of Medicine of USC participates in the Early Decision Program. Interested applicants apply between June 1 and July 31 and are notified of the Admissions Committee's decision by September 1.

The Committee on Admissions reviews all information submitted on the AMCAS application as well as any supplemental data; the school charges a \$90 fee for this

review. The most qualified candidates, as determined by this review, are invited for an interview.

Personal Interviews

Personal interviews are a required aspect of the application process. Invited candidates participate in two interviews; one with a faculty member and the other with a medical student. Interviews are conducted at the Keck School of Medicine on the Health Sciences Campus of the University of Southern California.

Notice of Acceptance

Notices of acceptance will be sent to successful candidates beginning in October until the class is filled. Since Keck uses a rolling admissions process, it is highly recommended to submit a completed application early in the cycle. If not chosen for an interview, candidates are usually notified by March of the application year.

Candidates must reply to an offer of admission and agree to the Essential Characteristics and Abilities Required for the Completion of the MD Degree within five business days of receiving the offer of admission. A letter of withdrawal, via email or post mail, is required if students wish to relinquish their place in the class; release is granted automatically when the letter is received.

M.D./Ph.D. Program

The Keck School of Medicine has developed an M.D./Ph.D. program designed for individuals who aspire to a career in academic medicine or a leadership role within the biomedical industry. Students are expected to acquire the modern skills that are required for physician competence. Additionally, the M.D./Ph.D. program provides an opportunity for the development of research expertise and academic excellence while fulfilling the requirements for a Ph.D. degree.

A joint program between the Keck School of Medicine and the California Institute of Technology (Caltech) was established in fall 1997 for the granting of the M.D./Ph.D. degree. Ph.D. studies may be carried out at Caltech or through collaboration between two laboratories at both institutions. The M.D. will be awarded from the Keck School of Medicine and the Ph.D. will be awarded from Caltech.

The M.D./Ph.D. executive committee is responsible for selecting students for the M.D./Ph.D. program. Members of the committee review the qualifications of each applicant, including MCAT and Graduate Record Examinations (GRE) scores available, academic performance, letters of recommendation and research experience. The committee interviews candidates and then selects students for admission to the program. All applicants to the joint program interview at Keck School of Medicine and the California Institute of Technology.

General Information

The M.D./Ph.D. program enrolls four students annually. Students have the option of doing the Ph.D. at USC or Caltech. Each student accepted to the program must also be accepted to the Keck School of Medicine. All positions are fully funded.

Requirements

Admission requirements for the M.D./Ph.D. program are those of one of the graduate programs at Caltech, the Keck School of Medicine and USC. Students select the basic science program of their choice during the first two years of the medical curriculum; descriptions of these programs are available from each department or program and Caltech.

Graduate Record Examinations (GRE)

To assist the M.D./Ph.D. Committee in its evaluation of candidates, applicants to the M.D./Ph.D. program are

encouraged to provide recent GRE scores. The committee does not, however, require GRE scores in order to consider an application.

Applications

Applicants to the Keck School of Medicine are advised to request information about the M.D./Ph.D. program at the time of application. In addition to completing the medical school application, applicants should indicate their interest in the M.D./Ph.D. program.

Students who are currently pursuing the medical curriculum at the Keck School of Medicine may apply to the M.D./Ph.D. program by contacting: M.D./Ph.D. Program, Keck School of Medicine, 1975 Zonal Avenue (KAM 200), Los Angeles, CA 90089-9023; (323) 442-2965, FAX: (323) 442-2318.

Personal Interviews

All applicants are screened by members of the M.D./Ph.D. Executive Committee; candidates who meet the basic criteria of the program are then invited to be interviewed by members of the committee and faculty at USC and Caltech.

Notice of Acceptance

Students selected for acceptance to the M.D./Ph.D. program are notified between January and May of each year. Students begin their program in the fall semester and register for courses in the medical curriculum at that time.

Further information about the M.D./Ph.D. program at the Keck School of Medicine may be obtained by contacting: M.D./Ph.D. Program, Keck School of Medicine, 1975 Zonal Avenue (KAM 200), Los Angeles, CA 90089-9023; (323) 442-2965, FAX: (323) 442-2318; email: mdphdpgm@usc.edu.

Graduate Degree Programs

Admission standards for these curricula are established jointly by the Keck School of Medicine, its participating programs and the Graduate School.

Applicants to graduate degree programs offered at the Keck School of Medicine must meet the general criteria for acceptance to the Graduate School. Each participating program may have additional requirements for application. The programmatic requirements for the Keck School of Medicine's graduate programs are detailed in the Graduate Degree Programs section on page 763xx.

Further information about graduate degree programs at the Keck School of Medicine may be obtained by contacting: Office of the Associate Dean for Graduate Studies, Keck School of Medicine, 1975 Zonal Avenue (KAM B16), Los Angeles, CA 90089-9023; (323) 442-1607, FAX: (323) 442-1199.

Tuition and Fees

The tuition and fees listed below are estimated for fall semester, 2013. All fees are subject to change without notice by action of the University of Southern California Board of Trustees. The university reserves the right to assess new fees or charges. Tuition is not refundable; late registration fees are mandatory and cannot be waived.

Tuition for each semester of the medical school curriculum is due and payable at the beginning of the semester. Registration is not permitted after the third week of instruction. Late payment of tuition is subject to a mandatory late fee. Average budgets for medical students will vary according to their year in the curriculum. Sample budgets for Year I, Year II, and the Junior/

Senior Continuum may be requested from the Office of Financial Aid. Tuition, mandatory fees and parking are the same for all years.

Tuition for courses of the graduate curriculum is based upon the number of units assigned to each course. The Graduate Degree Programs section provides a department-by-department list of graduate course titles; the number following each title indicates the number of units for which tuition is charged. Late payment of tuition is subject to a mandatory late fee.

Required Fees (Estimated)

Academic Year Tuition (two semesters)	\$52,408
Graduate Tuition (per unit)	1,536

Student Health Service Fee (annual)	524
Student Programming Fee (graduate)	75
Student Services Fee	25
Norman Topping Scholarship Fee	16
Health Insurance	1,519
Annual Dental Rate	136
Malpractice Insurance	25 (per term)
Disability Insurance	61 (per term)

Optional Fees

Parking fee, per semester (see Tuition and Fees, page 42xx).

Grading and Evaluation

The Keck School of Medicine employs a system of evaluation and grading designed to encourage student self-reliance, to stimulate the student's independent quest for knowledge and to promote excellence in academic achievement.

For courses of the medical curriculum, the Keck School of Medicine does not award numerical or letter grades. The evaluation process leading to a pass or fail grade is based on performance of the student in relation to announced course criteria. Throughout medical school, students will be evaluated on their fund of knowledge, problem-solving ability, professional behavior, relevant personality traits and clinical and interpersonal skills. Additional information on grading and

evaluation is contained in the handbook provided to every enrolled medical student.

Faculty instructors are responsible for establishing evaluation criteria appropriate to the objectives of each course, discipline and clerkship, and for specifying the manner in which evaluative information is to be gathered. Instructor comments on student performance form an integral part of a student's total evaluation. For each evaluation, descriptive comments based on the student's overall performance in relation to course criteria are submitted for permanent file to the office of the associate dean for student affairs, together with performance reports.

The student's permanent file is used to prepare a letter from the associate dean of Student Affairs of the Keck School of Medicine, which accompanies student applications for internships and residencies, and to determine scholastic suitability for election to Alpha Omega Alpha, the medical school honor society. These records are maintained by the Office of Student Affairs; students may review their records during regular office hours. During the lifetime of the physician, the permanent student record may be consulted as evidence of completion of the required curriculum and as certification for licensure.

Grading and evaluation policies for graduate degree programs and for joint M.D./Ph.D. degrees are established in conjunction with the Graduate School. In general, courses taken in partial fulfillment of graduate degree requirements receive letter grades that are recorded by the university.

Degrees and Requirements

The Keck School of Medicine and its departments offer types of curricula leading to award of: the Doctor of Medicine; joint M.D./Ph.D.; joint M.D./MBA; joint M.D./MPH; a Master of Academic Medicine, MAM; Global Medicine, M.S.; Pharm.D./M.S., Global Medicine; Global Health, B.S.; graduate degrees in conjunction with the Graduate School in Applied Biostatistics/Epidemiology, M.S.; Biochemistry and Molecular Biology, M.S., Ph.D.; Biometry, M.S., Ph.D.; Biostatistics, M.S., Ph.D.; Cell and Neurobiology, M.S., Ph.D.; Clinical, Biomedical and Translational Investigations, M.S.; Epidemiology, Ph.D.; Experimental and Molecular Pathology, M.S.; Genetic, Molecular and Cellular Biology, Ph.D.; Molecular Epidemiology, M.S., Ph.D.; Molecular Microbiology and Immunology, M.S., Ph.D.; Nurse Anesthesia, M.S.; Physiology and Biophysics, M.S., Ph.D.; Psychology and Public Health, Ph.D./MPH; Statistical Genetics and Genetic Epidemiology, Ph.D.; Integrative Biology of Disease, Ph.D.

The Department of Family Medicine has one academic division: the Division of Physician Assistant Studies, which offers the Master of Physician Assistant Practice.

The Department of Preventive Medicine has two academic divisions: the Health Behavior Research Division, which offers a B.S., Health Promotion and Disease Prevention Studies/Master of Public Health; Master of Public Health; Pharm.D./Master of Public Health; Ph.D., Physical Therapy/Master of Public Health; Ph.D., Preventive Medicine (Health Behavior Research); and the Biostatistics Division, which offers M.S. programs in Biostatistics, Molecular Epidemiology, and Applied and Biostatistics/Epidemiology. The division also offers Ph.D. programs in Biostatistics, Epidemiology, and Molecular Epidemiology.

In addition, departments of the school have certificate programs in certain medical specialties.

The Medical Education Committee (MEC) is responsible for overall planning of the medical school curriculum. Separate curriculum committees plan and supervise the instructional programs for each year of medical school. Each of the committees includes student representatives and faculty members from the departments involved in each year's teaching program.

The curriculum of medical education at USC continues to emphasize preparation of the student to give optimal patient care. Students are progressively involved in patient care beginning with their first semester. The curriculum is patient-oriented, and students are expected to assume increasing responsibility for patient care as they acquire sufficient knowledge and skills. During the clinical experiences of the Junior/Senior Continuum students eventually attain a level equivalent to that of an intern.

At the same time, the school recognizes that the explosion of knowledge and techniques brought about by the current "biotechnology revolution" is rapidly altering

the practice of medicine. During the four years of medical school, students cannot be taught all that will be needed for the practice of medicine — either now or in the years ahead. To a far greater degree than in the past, the present curriculum encourages students to acquire skills and habits of self-education and self-instruction that will prepare them for lifelong learning.

The faculty of the school recognize that while most students will eventually practice medicine, some will choose an academic research career. The plan of medical education fosters the development of individuals whose careers may be directed along this path. Faculty are available to counsel and encourage research participation by students during their medical school training.

The curricula of the Keck School of Medicine and its departments acknowledge the crucial place of basic medical science in the advance of modern clinical practice. Both basic and clinical science are taught throughout the four years of the undergraduate medical curriculum. Basic science is taught both as pure basic science and in correlation with clinical science. In addition, a number of the school's departments cooperate with the USC Graduate School to offer degree courses leading to the award of the Master of Science and Doctor of Philosophy. Most of these graduate courses may also be taken as part of the school's joint M.D./Ph.D. program.

Doctor of Medicine

The Keck School of Medicine awards the Doctor of Medicine to enrolled students who have satisfactorily completed the four-year curriculum of the school. This curriculum integrates instruction in all departments of the school: Department of Anesthesiology, Department of Biochemistry and Molecular Biology, Department of Cell and Neurobiology, Department of Dermatology, Department of Emergency Medicine, Department of Family Medicine, Division of Medical Education, Department of Medicine, Department of Molecular Microbiology and Immunology, Department of Neurological Surgery, Department of Neurology, Department of Obstetrics and Gynecology, Department of Ophthalmology, Department of Orthopaedics, Department of Otolaryngology — Head and Neck Surgery, Department of Pathology, Department of Pediatrics, Department of Physiology and Biophysics, Department of Preventive Medicine, Department of Psychiatry and the Behavioral Sciences, Department of Radiation Oncology, Department of Radiology, Department of Surgery and Department of Urology.

The sections that follow provide a synopsis of the emphases and organization of this four-year curriculum.

Years I–II (two academic years)

The curriculum is designed to enhance the students' understanding of the basic sciences and their relevance to clinical medicine. The methodology used will improve students' problem-solving and independent study skills. Curriculum themes are delivered in a case-centered format with the integration of small-group learning sessions, directed independent study and newer instructional technologies emphasized.

Year I–II begins in the first semester with Foundations of Medical Sciences followed by organ system review ending with Integrated Case Study section. There is an eight-week summer break between the first and second years. Students also take Introduction to Clinical Medicine, Professionalism and the Practice of Medicine, and Business of Medicine.

Each week of the academic year is composed of approximately 20 hours of lecture and small group sessions with an additional 20 hours of independent directed study, Introduction to Clinical Medicine, Professionalism and the Practice of Medicine, and Business of Medicine. Examinations in all systems throughout the first two years are graded Pass/Fail. Dean's recognition is awarded on the basis of year-end comprehensive examinations and special projects.

Foundations of Medical Sciences (FMS)

This 19-week introductory system provides the student with the fundamental knowledge necessary for the integrated study of the basic and clinical sciences in the human organ systems. Foundations of Medical Sciences is divided into three sections: FMS I, II and III. The overarching goal for these sections is the use of knowledge of medical science to describe basic concepts relating to the structure and function of the human body in normal and diseased states, and thus, provide a foundation for comprehending the disease-specific content required to achieve the case-based objectives in subsequent organ systems.

Gross Anatomy

Cadaver dissection remains a unique teaching tool by which the three dimensional organization of the human body is studied. Gross Anatomy will begin in the Core Principles of health and disease system with the dissection of the body wall and major body cavities followed by head and neck dissection in the neurosciences system, limbs, dissection during the musculoskeletal system and pelvic cavity dissection in reproduction system. Continued study of gross anatomy by use of prosected anatomical specimens as well as computer programs, selected review lectures, and so on, continues throughout the integrated organ systems.

Introduction to Clinical Medicine (ICM)

ICM expresses the strongly patient-centered orientation of the medical school curriculum. The student is introduced to patients and is involved in patient care activities from day one. Students are introduced to the principles of patient care and management and examine what it means to be a physician and how one becomes a physician.

The major content areas of the course include communication in the setting of illness, the unified concept of health and disease (the biopsychosocial model), basic clinical skills and the correlation of basic science with clinical medicine.

ICM emphasizes the systematic acquisition of the clinical skills of interviewing, history taking, physical examination, elementary clinical problem solving and medical record keeping. Throughout the Year I–II continuum, the ICM clinical skills curriculum is integrated with basic science instruction. Students can therefore learn and apply basic science knowledge in the clinical setting. By encouraging a thorough understanding of the direct applications of basic science research to modern clinical medicine, instructors motivate the student to learn, use and retain more of the content and concepts presented in the basic science portions of the curriculum.

A group of five or six students spends from four to eight hours each week with an instructor from the clinical faculty who remains with the group for one to two years. As the group deals with basic medical themes (death, pain and helplessness) and issues (patient responsibility, learning to live with ambiguity and uncertainty), instructors help students to cope with their own feelings. This format opens the door for student-faculty interaction and improvement of student-faculty communication.

Instructors encourage students to take advantage of the learning experiences provided by their roles as helping and therapeutic persons. Students develop their ability to communicate with patients in the setting of illness and are guided by patient concerns to enhance their own growing knowledge, skills, abilities and responsibilities. Students are expected to acquire skills and habits of self-education and self-instruction that will prepare them for lifelong learning.

The unified concept of health and disease presented in this course enables students to comprehend the human organism in all its complexity. Using their clinical experiences as a teaching model, students are taught to consider the patient as an integrated whole and to view the patient's illness or disease as more than simply a disruption of physiologic processes or a collection of physical findings.

Additional learning experiences occur through workshops and focus experiences. ICM workshops provide standardized instruction in history taking and physical examination, as well as integrated instruction in areas that cross disciplines. These include physician well being, substance abuse, domestic violence, and ethics. Through focus experiences, students are encouraged to explore a variety of practice environments as well as community-based health and social services. For example, students may visit outpatient clinical settings, a geriatrics long term care facility, a hospice care facility or homeless services organizations.

Professionalism and the Practice of Medicine (PPM)

The purpose of the PPM course is to create a community and social context to provide, identify and facilitate learning from professional role models for students throughout the first two years of the medical school curriculum, as well as to help students gain skills and competence in the areas of communication, the social and community context of health care, ethical judgment, self-awareness and reflection, self-care and personal growth, professionalism, cultural competence, and lifelong learning. The curriculum is dynamic and interactive, allowing for much small-group discussion and participation. Students are encouraged to work collaboratively and enhance small-group skills, in order to improve their participation in Introduction to Clinical Medicine (ICM), Gross Anatomy, MDL laboratories and large-group sessions, as well as to prepare them for the team work of their clinical years.

The PPM course sessions meet on Monday afternoons, typically for two hours per session. The students meet in groups with two faculty members, who serve as their mentors throughout the first year of their pre-clinical education; at least one mentor is a clinician. The clinical faculty comes from multiple disciplines within Keck and the local community. While the course features large lectures, there is a great emphasis on small-group learning acquired from community leaders, faculty-mentored small-group discussions, student presentations and student-led sessions.

The students participate in a core curriculum in Year I, which includes general topics such as cultural competence, ethics, health care policy and finance, professionalism, and empathy. In Year II, the students are allowed to select from nine different areas of interest (selectives), and meet in groups with faculty having expertise in the given area. Examples of selectives presented include advanced ethics, medicine and the mind, spirituality and medicine, medical arts and humanities, global health, complementary and alternative medicine, medicine's intersection with technology, physicians operating outside their comfort zones, and the future of health care.

The PPM course provides students with an opportunity to build a professional identity, develop relationships with faculty mentors, and increase team-building and community-building skills. Students receive an introduction to the concepts of professionalism and ethics, with a better understanding of their real-world implications. The PPM course encourages leadership while engaging in the process of learning, characterized by presentations within both small and large groups, as well as professional development through exposure to multiple professional, ethical, and cross-cultural scenarios, cases, and providers. Evaluation is provided through student submission of portfolios containing written self-reflections, responses to faculty and peer feedback, and evaluations completed over the course of a two-year longitudinal curriculum. Finally, PPM hones sensitivity and skills relevant to medical professionalism to better prepare students for their transition into the clinical years of the medical school curriculum.

Business of Medicine (BOM)

This course, designed for Year II and III medical students, will introduce students to the fundamentals of the business of medicine, including the nuts and bolts of

medical business, practice management and law, physician leadership, health care finance, and health care quality and costs. The BOM course will be case-based and interactive, and facilitated by leaders in the fields of health care business and management.

Organ System Review

A sequence of study presenting integrated basic and clinical science instruction involving human organ systems — skin, hematology and clinical immunology, neurosciences, musculoskeletal, cardiovascular, renal, respiratory, endocrine/metabolism, reproduction, gastrointestinal/liver — follows Foundations of Medical Sciences.

Integrated Case Study

This section completes the second year of the Year I–II continuum and emphasizes patient-centered problems that integrate the basic and clinical science presented in the preceding organ systems. Students will explore the multi-organ effects of disease processes and reinforce diagnostic reasoning skills. In addition, concepts of pathophysiology, evaluation and management that can be applied to any organ system will be included. This section will also reinforce the appropriate use of medical information resources, effective self-directed learning skills, and interpersonal and group communication skills.

Separate review sessions of the important basic science and clinical concepts covered during the previous two years also occur during this seven-week section. These sessions will assist students in preparing to take Step I of the United States Medical Licensing Examination (USMLE).

By early spring of the second year of the Year I–II continuum, students are expected to select their academic clinical advisers and to begin arranging the schedule of clerkships to be taken during Year III–IV. By the end of the fall semester, Year II, each student receives information that describes the curriculum requirements of Year III–IV. Students choose the area of medical practice that they are most likely to pursue and an adviser is assigned from that discipline. The adviser counsels the student on clerkships and opportunities in graduate medical education.

Required Scholarly Project

The Required Scholarly Project (RSP) is designed to provide medical students with the opportunity to become engaged in hypothesis-driven research to promote analytical thinking skills and ultimately, physician leaders. The aim of the RSP is to expose students to the process of scientific inquiry, teaching them how to formulate an answerable question and the requisite methodology in seeking appropriate answers. Each student undertakes a faculty mentored research project in a discipline of his or her choice. Viable disciplines encompass a wide spectrum to include: biomedical research, from discovery to application, and health care, i.e., basic science, clinical, educational, behavioral science, health services, community and epidemiological activities. The RSP is interwoven with the curriculum, which includes didactic instruction on topics such as study design and biostatistics. The RSP is a longitudinal experience throughout all four years of medical school, with successful completion being required for graduation.

Students with projects deemed meritorious by the RSP steering committee will receive "Distinction in Research" recognition at graduation.

Year III–IV (two academic years)

The final two years of medical school are designed as a continuum of two calendar years, beginning in July at the end of Year II. During the spring of their second year, students schedule clerkship rotations to be taken during the two years. Each student's program is designed with the assistance of faculty advisers and includes 50 weeks of required clerkships, 16 weeks of selective clerkships and 16 weeks of elective clerkships.

All degree candidates are required to take Step I of the United States Medical Licensing Examination (USMLE) prior to entering Year III–IV and pass it before starting their senior year. Students must pass Step II CK and CS of the USMLE as a graduation requirement.

During Year III–IV, each student may schedule 16 weeks of discretionary time for personal convenience, remedial work, funded research work and other non-curricular activities, such as investigating postgraduate training programs. Although every effort is made to provide flexibility in the scheduling of each student's program, some inherent limitations are imposed by the maximum enrollment permitted for each clerkship. Students are a vital part of the university's medical team, which provides health care for patients throughout the year. Vacations are therefore subject to some scheduling adjustments.

Required Clerkships

Family Medicine	6 weeks
General Surgery	6 weeks
Surgical Subspecialty	4 weeks
Internal Medicine	6 weeks
Internal Medicine Sub-internship	4 weeks
Neurology	4 weeks
Obstetrics and Gynecology	6 weeks
Pediatrics	6 weeks
Psychiatry	6 weeks
Intercession	2 weeks (two, one-week sessions)

Intercession I and II

The Intercession curriculum is two, one-week sessions established for Year III students that will enable learners to pause, reflect and consolidate the many and varied clinical experiences that they encounter in their third year of medical school; to promote advanced clinical skills, professional development, health policy formulation and ethical decision-making, and patient safety; and to further prepare for the residency application process.

This individualized curriculum will allow students to revisit and focus basic-science topics through the prism of newly learned clinical material and to foster capacity for the analysis and formulation of health care policy in light of the political, economic, legal and social, and ethical dimensions of health care.

Students will be instructed in a systems-based approach to patient safety by stimulating the imagination, curiosity and skills of close observation and careful interpretation through engagement with the arts and humanities. Developing and building advanced clinical skills by acquiring, appraising and applying evidence in the context of individual patient decision-making, (i.e.,

Evidence Based Medicine) are two important goals of the Intercession curriculum.

Providing comprehensive, coordinated and consistent career advising along with fostering the continuing professional development of the learners in the frame of clinical practice are key components. Finally, the curriculum will provide ongoing instruction in the provision of culturally competent care and prepare learners for their required community project.

Selective Clerkships

Students are required to schedule 16 weeks of selective clerkships, chosen from a list of four- or six-week clerkships approved by the Clinical Curriculum Committee. Selective clerkships are carried out at USC-affiliated hospitals and encompass virtually all specialty areas. Information is available at medweb.usc.edu.

Elective Clerkship

The elective period consists of 16 weeks, during which electives may be taken on campus, at USC-affiliated hospitals or at more distant medical schools or medical centers. Approved on-campus electives that are offered regularly are listed in the elective catalogue.

Proposals for other on-campus and off-campus electives are reviewed individually by a committee composed of faculty members and students. All petitions must be submitted at least six weeks before the beginning of the rotation. Off-campus electives require documentation from the off-campus preceptor, endorsement of the student's medical school adviser, and prior approval and review by the Clinical Curriculum Committee. Credit is not given for electives until an evaluation has been received from the preceptor and a critique of the elective submitted by the student. Students with an academic deficiency may not schedule off-campus electives.

Program in Medical Humanities, Arts and Ethics

This four-year curriculum begins with collaborative discourse about ethical problems to help students learn to identify, analyze and resolve clinical ethical problems. This exercise is followed by interim skill building/maintenance and by instructor-facilitated discussion of videotaped ethics cases.

In Year II, the program focuses on ethical discernment and action in simulated settings and the study of the human dimensions of medicine. Standardized patients interact with students to help teach the telling of bad news, and students also learn from the humanities about patients as persons. The program concludes with a forum theatre in which students must decide what action to take based on their own convictions.

Year III is devoted to ethics education by clinical role models and encompasses instruction in the core clerkship by ethical standard-bearers. Students also participate in home hospice care and pain management cases.

During Intercession, the program includes a series of sessions that focus on contemporary health care and the physician-in-society. The goal of the sessions is to provide students with the experience of integrating the principles, methods and bedside issues included in Years I–III of the program. Students practice applying the micro-level (individual/clinical) decisions to the ethical dilemmas and policy issues that face physicians at the mezzo-level (health care organizations), and to the

macro-level (profession as a whole, state and nation). Topics include issues of professionalism; allocation of resources; the economics, organization and societal oversight of health care; and the care of dying patients.

Fifth-year Research Option and Dean's Scholars

USC offers students the opportunity to take a full year of research experience with either a Keck School of Medicine faculty mentor or an approved faculty mentor at another institution. This program is open to any student in good to excellent academic standing who has completed his or her first year of medical school. Students interested in the option should identify a faculty preceptor and present a description of the proposed research program and funds available in support of the program to the associate dean for curriculum. A stipend, comparable to that received by a graduate student at the postgraduate level, is available. Application for this program is made through the Office for Student Affairs (KAM 100B) and will be supervised through the Office of the Associate Dean for Student Affairs (KAM 100B). Dean's research scholarships are available for selected dean's research scholars pursuing this option.

M.D./Ph.D. Program

Departments and programs of the University of Southern California and the California Institute of Technology participate in the joint M.D./Ph.D. degree program administrated by the USC Graduate School, the Keck School of Medicine and the California Institute of Technology. This program integrates the medical school curriculum with graduate curricula in the basic sciences, to provide a unified course of study leading to both the M.D. and Ph.D. degrees.

This program is especially designed to prepare highly qualified students for careers in academic medicine and medical research. Formal course work and dissertation research provide the student with in-depth scientific preparation and research experience which enhances the application of basic science information to the diagnosis, treatment and prevention of disease. Conversely, the Ph.D. education becomes more meaningful because of its disease-oriented emphasis.

The curriculum for M.D./Ph.D. students differs from that of Ph.D. graduate students in the basic sciences in that the former take medical school courses as well as selected graduate level basic science courses and specific courses designed for M.D./Ph.D. students. The integrated training of the M.D./Ph.D. program enables students to compress their total academic effort by applying some course work toward the requirements of both degrees. On average, completion of the combined program requires a total of eight years.

The following graduate programs participate in the M.D./Ph.D. program:

- Biochemistry and Molecular Biology
- Cell and Neurobiology
- Epidemiology
- Genetic Molecular and Cellular Biology
- Integrative Biology of Disease
- Molecular Microbiology and Immunology
- Pathology
- Physiology and Biophysics
- Preventive Medicine

Selected graduate programs from the USC Viterbi School of Engineering and the USC Dornsife College of Letters, Arts, and Sciences also participate in the combined degree program.

Time limits for qualifying examinations and other procedures are determined by considering M.D./Ph.D. students as medical students for the periods when they are following the medical curriculum and as full-time graduate students during their years of graduate research prior to advancement to the Junior/Senior Continuum.

M.D./Ph.D. candidates have the option of pursuing a laboratory experience before beginning the Year I medical curriculum through a laboratory rotation at either USC or the California Institute of Technology. This laboratory experience is strongly encouraged although not required.

During the first two years of their program, M.D./Ph.D. students follow the medical school curriculum and gain added exposure to research faculty through a special survey course. Students are guided by the M.D./Ph.D. executive committee, which outlines the integration of the graduate program with the medical school curriculum and serves as the students' liaison until they have selected a graduate program and graduate research adviser. The graduate programs vary widely in the extent to which they allow credit toward the Ph.D. for courses taken during the first two years of medical school. M.D./Ph.D. students are encouraged to select a graduate program by early spring of the second year of medical school. Students are required to apply for admission to the Ph.D. program of their choice by the recommended deadline on the graduate application.

Prior to entering Ph.D. studies, the Keck School of Medicine allows M.D./Ph.D. candidates the option of beginning their clinical training by taking one six-week required clerkship in either Family Medicine, Internal Medicine or Pediatrics. This can provide an early introduction to clinical medicine and a context for integration with the basic sciences of the thesis years.

Beginning with the third year of the M.D./Ph.D. program, students enter their selected program as full-time graduate students. Although the content of graduate courses required of M.D./Ph.D. students is generally identical to that required of Ph.D. students in the same graduate program, M.D./Ph.D. students are permitted greater latitude in the scheduling of their graduate courses. Four years are commonly necessary to fulfill requirements for the Ph.D., including course work, qualifying examinations, independent dissertation research, and writing of the dissertation.

After completion of the graduate program, the student is advanced to the Junior/Senior Continuum and completes the final two years of clinical training required by the medical school curriculum. No portion of clinical training is deleted from the joint program. Prior to entering the clinical component of the joint degree, students will be expected to participate in a clinical shadowing experience, which could be done throughout the Ph.D. studies or as part of an intensive program prior to entering the clinic. Students will also be required to participate in the Medical Scholars Program clinical tutoring skills program held in the spring of each year and re-take the Year II Objective Structured Clinical Examination at the end of May with the second year medical students.

Keck School of Medicine-Caltech M.D./Ph.D. Program

A joint program between the Keck School of Medicine and the California Institute of Technology (Caltech) was established for the granting of the M.D./Ph.D. degree. Students do their preclinical and clinical work at the Keck School of Medicine and their Ph.D. work with any member of the Caltech faculty, including the biology, chemistry, engineering, applied sciences divisions and interdisciplinary programs divisions.

Admission to this joint program is made through the usual Keck/USC M.D./Ph.D. process. All applicants are interviewed at Keck School of Medicine and Caltech. Matriculated students in this program have the option of doing their Ph.D. at USC or Caltech. The M.D. degree will be awarded from the Keck School of Medicine and the Ph.D. from Caltech.

Further information about the M.D./Ph.D. program at the Keck School of Medicine may be obtained by contacting: M.D./Ph.D. Program, Keck School of Medicine, 1975 Zonal Avenue (KAM 200), Los Angeles, CA 90089-9023; (323) 442-2965, FAX: (323) 442-2318; email mdphdpgm@usc.edu.

M.D./MBA Dual Degree Program

In response to the ongoing reorganization of health care delivery systems, and the growing awareness of the impact of business decisions on health care, the Keck School of Medicine and the USC Marshall School of Business jointly offer an innovative program for individuals seeking knowledge in both medicine and business administration. The program is designed to prepare its graduates to assume leadership in the design and management of health care systems.

The M.D./MBA program spans five years. Interested students apply during their second or third year of medical school, and begin required MBA courses following successful completion of the first two or first three years of medical school. The remaining time is devoted to the clinical clerkships of the Keck School of Medicine and completion of graduate business elective courses. At the conclusion of the program, students will have completed 48 units in the Marshall School of Business, including required and elective courses, and four years of courses in the Keck School of Medicine. Dual degree students may not count courses taken outside the Marshall School of Business toward the 48 units.

First and Second Years: Required medicine courses.

Third or Fourth Year: Required MBA courses and graduate business electives.

Remaining Years: Keck School of Medicine core, selective, and elective clerkships and graduate business electives.

Admission Requirements

Students who have a baccalaureate degree from an accredited college or university and have successfully completed at least two years in the Keck School of Medicine will be considered for admission to the Marshall School of Business (see page 154xx). Requirements for admission to the regular MBA Program (with the

exception of the GMAT) must be fulfilled by the medical student for admission to the Marshall School.

The M.D. and the MBA degrees are awarded simultaneously upon completion of their requirements by the Keck School of Medicine and the Marshall School of Business.

M.D./Master of Public Health

The joint M.D./MPH program at the Keck School of Medicine is designed for individuals who envision a medical career that combines public health and medical disciplines. Many individuals entering careers as medical doctors or public health practitioners wish to acquire not only medical practice competencies, but also an understanding of the history, organization, goals and philosophy of public health. The joint M.D./MPH program offers a broad-based orientation to public health while the student completes medical school requirements. The Master of Public Health degree provides increased knowledge of and sensitivity to the political, historical, economic and social environments of health promotion and health services delivery.

The M.D./MPH program spans five years (four years of medical school and one year of public health courses). Students begin the core MPH courses following the successful completion of the first two years of medical school. The last two years of the program are devoted to clinical clerkships of the School of Medicine and to the completion of the elective courses and practicum (field experience) of the MPH program. At the conclusion of the joint degree program, students will have completed 42-46 units in the Master of Public Health program and four years of courses in the Keck School of Medicine.

Students who are enrolled in the Keck School of Medicine must apply to the Master of Public Health program no later than January of their second year. All requirements for admission to the regular MPH program must also be fulfilled by dual degree applicants.

All students in the M.D./MPH program must meet course requirements, grade point average requirements and program proficiency requirements of both programs. Students must have a grade point average of 3.0 in the MPH curriculum to meet graduation requirements.

The M.D. and the MPH degrees are awarded simultaneously upon completion of the Keck School of Medicine and the Master of Public Health program requirements. For more information, contact the MPH Program Office at (323) 442-7257.

Ph.D. Programs in Biomedical and Biological Sciences (PIBBS)

Keith Administration Building B-16
1975 Zonal Avenue
Los Angeles, CA 90089-9031
(323) 442-1609
FAX: (323) 442-1199
Email: pibbs@usc.edu
pibbs.usc.edu

Program Director: Ite A. Laird-Offringa, Ph.D.,

Associate Professor of Surgery, Biochemistry and Molecular Biology

The USC Ph.D. Programs in Biomedical and Biological Sciences (PIBBS) is a universitywide program that is an entryway into graduate studies and research leading to the Ph.D. degree in a broad range of biological and biomedical disciplines. Interdisciplinary studies that span multiple fields have sparked a startling surge in new discoveries that excite intellectually and also promise great benefits to society.

Students will complete three research rotations during their first year. In addition, they spend two semesters taking courses of their choice in a variety of disciplines such as biochemistry, epidemiology, (stem) cell biology, neurobiology, molecular genetics, cancer and physiology. At the end of the second semester each student chooses a faculty member to serve as a thesis research adviser and chooses a specific Ph.D. program from among the participating programs listed. Subsequently, each student will focus on the completion of course requirements and qualifying examinations for the chosen Ph.D. program and will develop and complete an original research project that will serve as the basis for a doctoral dissertation.

For information on application materials and descriptions of the research interests of participating faculty, see the PIBBS site on USCweb (*pibbs.usc.edu*).

Participating Schools and Graduate Programs

USC Dornsife College of Letters, Arts and Sciences

Department of Biological Sciences

Marine Environmental Biology

Molecular and Computational Biology

Integrative and Evolutionary Biology

Department of Chemistry

Neuroscience

Ostrow School of Dentistry of USC

Craniofacial Biology

USC Viterbi School of Engineering

Biomedical Engineering

USC Davis School of Gerontology

Keck School of Medicine of USC

Genetic, Molecular and Cellular Biology

Integrative Biology of Disease

Preventive Medicine

Biostatistics

Health Behavior Research

Molecular Epidemiology

USC School of Pharmacy

Pharmacology and Pharmaceutical Sciences

Molecular Pharmacology and Toxicology

Pharmaceutical Sciences

A detailed description of each of the Ph.D. programs listed here can be found by consulting the Catalogue index.

Admission

Applicants to PIBBS must have a bachelor's or master's degree with a major emphasis in the natural sciences. Applicants must have a strong record of academic achievement, satisfactory performance on the general and advanced portions of the GREs. Three letters of recommendation are required, one of which should be from a laboratory research mentor. Previous research experience is expected. Students are admitted for the academic year beginning in the fall. Although there is

no formal application deadline, complete applications received before December 1 will be given priority.

Applications are submitted electronically. Please see the PIBBS Website for information: *pibbs.usc.edu*. Supporting materials should be sent to: PIBBS, University of Southern California, 1975 Zonal Avenue, KAM B-16, Los Angeles, CA 90089-9031.

Financial Support

Admitted students are supported by research assistantships or fellowships during their two semesters in the PIBBS program. Tuition, health insurance and standard fees are also covered. After the student completes the PIBBS program and enters a specific Ph.D. program, similar support mechanisms are generally provided by the Ph.D. granting program.

Curriculum

Most students will choose from the following courses during a two-semester period:

COURSES		UNITS
BIOC 790	Research (taken in conjunction with the rotation plan described below)	1-12
INTD 504	Molecular Biology of Cancer, or	
INTD 555	Biochemical and Molecular Bases of Disease, or	
INTD 572	Systems Physiology and Disease I	4
INTD 531	Cell Biology	4
INTD 561	Molecular Genetics	4
INTD 571	Biochemistry	4
INTD 573	Systems Physiology and Disease II	4

However, the list of courses for individual students may vary from this plan with permission of the program director. As part of the BIOC 790 course, each student will complete research rotations with three or more faculty members in participating Ph.D. programs. At the end of the second semester, each student will choose a faculty member to serve as dissertation adviser and will choose a specific Ph.D. program from the list of participating programs.

Graduate Degree Programs

In conjunction with the Graduate School, the Keck School of Medicine offers graduate curricula on the Health Sciences Campus leading to the Doctor of Philosophy in two interdisciplinary programs: Genetic, Molecular and Cellular Biology (GMCB) and Integrative Biology of Disease (IBD) with participating faculty from biochemistry and molecular biology, cell and neurobiology, molecular microbiology and immunology, physiology and biophysics and preventive medicine. In addition, individual departments offer degrees in biochemistry and molecular biology, cell and neurobiology, molecular microbiology and immunology, physiology and biophysics.

The Department of Preventive Medicine along with the USC Price School of Public Policy offer the Master in Public Health with concentrated study in one of four tracks: health promotion and disease prevention,

biostatistics/epidemiology, nutrition, and health communication.

The Department of Preventive Medicine also offers graduate curricula leading to Ph.D. degrees in biostatistics, epidemiology, molecular epidemiology, statistical genetics and genetic epidemiology or health behavior research.

Graduate credit is provided for some courses included in the Years I and II curriculum of the medical school.

The following sections provide an overview of the departmental graduate studies programs. The requirements listed are those of the individual departments and must be taken in conjunction with the general requirements of the Graduate School. For further information regarding graduate studies in the medical sciences, consult the specific departments or contact: Office of Graduate Affairs, Keck School of Medicine, 1975 Zonal Avenue (KAM B-16), Los Angeles, CA 90089-9023; (323) 442-1607, FAX: (323) 442-1199.

Doctor of Philosophy in Genetic, Molecular and Cellular Biology

Genetic, Molecular, and Cellular Biology

KAM B-16, MC 9031

(323) 442-1475

FAX: (323) 442-1199

Email: wli@usc.edu

Director: Wei Li, Ph.D.

Participating faculty: School of Medicine faculty from both basic and clinical departments who perform research. Interested faculty from other schools including Pharmacy, Dentistry, Engineering and USC College are encouraged to request to become participating faculty.

The goal of the Ph.D. program in Genetic, Molecular and Cellular Biology (GMCB) is to train investigators to develop multidisciplinary strategies to elucidate the basic molecular and cellular mechanisms responsible for the ability of cells and organisms to reproduce, differentiate, communicate with each other, and respond to internal and external stimuli. Such studies will also logically facilitate our understanding of disease processes and the ability of organisms to defend themselves against disease.

Major advances in biological and biomedical sciences frequently involve the bridging of ideas and technology from diverse disciplines. The Ph.D. program in genetic, molecular and cellular biology will emphasize breadth of research training fostered by the broad range of research interests and technological emphasis among participating faculty members from a variety of academic departments and disciplines. Close interactions among faculty and students provide an ideal environment for learning not only the skills required to conduct experiments but also the skills required to form new liaisons and collaborations with other scientists in diverse fields.

Admission Requirements

A baccalaureate degree in life sciences or sufficient courses in mathematics and the life sciences is required to provide a strong background for studies in biomedical research. Appropriate undergraduate degrees would be biology, physiology, engineering, chemistry or computer science. Successful applicants must have

satisfactory performance on the general and advanced portions of the GREs and three letters of recommendation. Previous research experience in a related field is expected but not required. Applicants who are accepted with minor deficiencies are expected to correct these during the first year.

In general (although not exclusively), new graduate students apply for admission to USC through the Ph.D. Programs in Biomedical and Biological Sciences (PIBBS), and become enrolled in the genetic, molecular and cellular biology graduate program after having completed the first year's course work and rotations. Application forms and information are available online at pibbs.usc.edu, or can be obtained from the PIBBS program, Office of Graduate Affairs, University of Southern California Keck School of Medicine, KAM B-16, 1975 Zonal Ave., Los Angeles, CA 90089-9031; email pibbs@usc.edu.

Degree Requirements

These degrees are awarded under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section, page 86xx, and the Graduate School section, page 97xx, of this catalogue for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School.

Advisory Committee

The student will be advised during the first year by the genetic, molecular and cellular biology executive committee. The purpose of the executive committee is to help the student in the selection of courses, selection of research rotations and, ultimately, a mentor and laboratory, to monitor the student's progress, and to ensure preparation for the screening procedure at the end of the first year.

Course Requirements

A minimum of 60 units is required, consisting of formal courses, seminars and research credits. At least 24 of the 60 units are to be formal graduate course work (lecture or seminar courses). Students must complete 16 units of course work before they are considered for the screening procedure. Additional course work relevant to the research interests of the student may be required by the student's qualifying exam committee or by the student's academic adviser in addition to the required 24 units.

Lab Rotations

During the first year, students sign up for BIOC 790 Research (4 units each semester) and rotate through the labs of three mentor members of the program (potential research advisers). By the first summer of graduate study, but no later than after 18 months in the program, each student is expected to have selected a research adviser.

In the first year, in addition to lab rotations, students are also required to take two 4-unit graduate-level courses each semester. In the second year, courses are selected with the approval of the student's qualifying exam committee with reference to the research area in which the student is working. The GMCB program requires students to take courses in biochemistry, cell biology and molecular genetics; a list of recommended/suggested courses that will satisfy these requirements is distributed to all students at the beginning of each

academic year. During the first summer term, all students take an ethics class (INTD 500 Ethics and Accountability in Biomedical Research). Within the first two years, each student must take a statistics course (PM 510L Principles of Biostatistics (4) or equivalent); students who have previously taken an undergraduate or graduate course in statistics or one in which statistical methods were emphasized should petition to request permission to waive this requirement. In the second and subsequent years, students are required to take BIOC 573 Optimal Research Presentations by Ph.D. Students. For these required courses, opting out, delaying or substituting a class requires the approval of the advisory committee of the program.

Screening Procedures

At the end of the first year, each student is required to pass a screening procedure based on the first year's required courses submitted by reports from the genetic, molecular, and cellular biology faculty to the executive committee, which is intended to expose any weaknesses in the student's abilities. Progress must be judged satisfactory in two areas: maintenance of satisfactory performance in course work and satisfactory completion of all research rotations.

Qualifying Examination

The qualifying examination, administered by the qualifying exam committee, should demonstrate a conceptual grasp of the major area of interest chosen and an understanding of the general framework and approaches of hypothesis-driven research.

Annual Research Appraisal

After advancing to candidacy, progress on dissertation research by each student is evaluated annually with an Annual Research Appraisal (ARA).

Dissertation

At the last ARA before the defense of the dissertation, the student submits an outline draft to the dissertation committee.

Defense

An acceptable dissertation based upon completion of an original investigation is required. The candidate must defend an approved draft of the dissertation in a public oral defense. The dissertation committee will then meet with the student in a closed session and complete the oral examination.

Doctor of Philosophy in Integrative Biology of Disease

Integrative Biology of Disease

KAM B-16, MC 9031

(323) 442-1475

FAX: (323) 442-1199

Email: mkast@usc.edu

Director: W. Martin Kast, Ph.D.

Participating Faculty: School of Medicine faculty from both basic and clinical departments with research programs. Interested faculty from other schools including Pharmacy, Dentistry, Engineering and USC College are encouraged to petition to join participating faculty.

The goal of the Ph.D. program in Integrative Biology of Disease (IBD) is to train investigators to develop strategies to implement and integrate the detailed information gained from cellular, molecular and genetic advances into studies of normal system function as well as studies of how and why systems are disrupted in disease.

The program applies a multidisciplinary approach to understanding the human organism as a whole. Breadth of interests and training are major features of this track and wide and varied skills in many research areas characterize the faculty. To facilitate application of multidisciplinary approaches, close and regular contact between participating faculty and students is a major theme of the Ph.D. track.

Admission Requirements

Students routinely enter the IBD program after completing their first year in the interdisciplinary Ph.D. Programs in Biomedical and Biological Sciences (PIBBS) year 1 program (instructions to apply below), through the M.D./Ph.D. program or after completing one year in a related basic science department. A baccalaureate degree in life sciences or sufficient courses in mathematics and the life sciences is required to provide a strong background for studies in biomedical research. Appropriate undergraduate degrees would be biology, physiology, engineering, chemistry or computer science. Successful applicants must have satisfactory performance on the general and advanced portions of the GREs and three letters of recommendation. Previous research experience in a related field is expected but not required. Applicants who are accepted with minor deficiencies are expected to correct these during the first year.

Students enter the Integrative Biology of Disease program only after being accepted into a laboratory for graduate work, usually in their second year through the PIBBS program after completing research rotations, through the M.D./Ph.D. program or through a department-based program. Students may petition the integrative biology of disease program executive committee for entrance before the second year if they have been accepted into a lab.

Online application to PIBBS is available at: pibbs.usc.edu. Additional information can be obtained from the PIBBS program, Office of Graduate Affairs, University of Southern California Keck School of Medicine, KAM B-16, 1975 Zonal Ave., Los Angeles, CA 90089-9031; email pibbs@usc.edu.

Degree Requirements

These degrees are awarded under the jurisdiction of the Graduate School. Refer to the Requirements for Graduation section, page 97xx, and the Graduate School section, page 97xx, of this catalogue for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School.

Advisory Committee

Students will be advised before their qualifying exam by the PIBBS program director and the integrative biology of disease mentor. The purpose of the executive committee is to help students in the selection of courses, selection of research rotations and, ultimately, a mentor and laboratory, to monitor students' progress, and to

ensure preparation for the screening procedure at the end of the first year.

Course Requirements

A minimum of 60 units is required, consisting of formal courses, seminars and research credits. At least 24 of the 60 units are to be formal graduate course work (lecture or seminar courses). Students must complete 16 units of course work before they are considered for the screening procedure. Additional course work relevant to the research interests of the student may be required by the student's qualifying exam committee or by the student's academic adviser in addition to the required 24 units.

Lab Rotations

During the first year in PIBBS, students sign up for BIOC 790 Research (4 units each semester), and rotate through the labs of three mentor members of the program (potential research advisers). By the first summer of graduate study, but no later than after 18 months in the program, each student is expected to have selected a research adviser.

In the first year, students are also required to take two, four-unit graduate-level courses each semester. Substitutions are possible, with approval of the executive committee if a student has already completed advanced course work in one or more of these areas. Suggested courses are provided in the list below. During summer term all students take an ethics class: INTD 500 Ethics and Accountability in Biomedical Research. For these required courses, opting out, delaying or substituting a class requires the approval of the advisory committee of the program.

SUGGESTED COURSES		UNITS
<i>Biochemistry</i>		
BISC 502a	Molecular Genetics and Biochemistry	4
INTD 571	Biochemistry	4
<i>Cell Biology</i>		
INTD 531	Cell Biology	4
<i>Molecular Genetics</i>		
BISC 502b	Molecular Genetics and Biochemistry	4
INTD 561	Eukaryotic Molecular Genetics	4
<i>Systems Physiology and Disease/Pathology</i>		
INTD 550	Introduction to Pathology	2
INTD 551	Pathobiology of Disease	4
INTD 572	Systems Physiology and Disease I	4
INTD 573	Systems Physiology and Disease II	4
<i>Ethics</i>		
INTD 500	Ethics and Accountability in Biomedical Research	4

In the second year, courses are selected with the approval of the student's qualifying exam committee with reference to the research area in which the student is working. By the end of the second year all students are

required to complete both INTD 572 Systems Physiology and Disease I and INTD 573 Systems Physiology and Disease II. Completion of both INTD 550 (4) and INTD 551 (4) can be substituted for either INTD 572 or INTD 573. In the second and subsequent years, students are required to take INTD 574 Systems Biology and Disease Seminar. Participation in an organized journal club or working group recognized by the executive committee is required each year. Within the first two years, each student must take a statistics course: PM 510L Principles of Biostatistics or equivalent.

Screening Procedures

At the end of the first year, each student is required to pass a screening procedure based on the first year's required courses submitted by reports from the Integrative Biology of Disease faculty to the executive committee. This is intended to expose any weaknesses in the student's abilities. Progress must be judged satisfactory in two areas: maintain satisfactory performance in course work, and satisfactory completion of all research rotations.

Qualifying Examination

The qualifying examination, taken at the end of the second year, is administered by the qualifying exam committee and should demonstrate a conceptual grasp of the major area of interest chosen and an understanding of the general framework and approaches of hypothesis-driven research.

Annual Research Appraisal

After advancing to candidacy, progress on dissertation research by each student is evaluated annually with an Annual Research Appraisal (ARA).

Dissertation

At the last ARA before the defense of the dissertation, the student submits an outline draft to the dissertation committee.

Defense

An acceptable dissertation based upon completion of an original investigation is required. The candidate must defend an approved draft of the dissertation in a public oral defense. The dissertation committee will then meet with the student in a closed session and complete the oral examination.

Courses of Instruction

INTERDEPARTMENTAL (INTD)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

INTD 500 Ethics and Accountability in Biomedical Research (1, Sm) The purpose of this course is to engage current (and potential) research trainees in discussions about the responsible conduct of science. The course is designed as an option for meeting current federal regulations which require that all predoctoral and postdoctoral fellows paid from federal contracts and grants have a component of ethical training. Graded CR/NC.

INTD 501 Recent Advances in Vision Science (1, max 4, FaSp) Recent advances in the understanding of the ocular surface are reported and discussed; students will learn how to read papers critically, develop speaking skills to explain a research paper and attend a three-day workshop on NIH proposal development and scientific manuscript preparation. Graded CR/NC.

INTD 504 Molecular Biology of Cancer (4, 2 years, Sp) Epidemiology, pathobiology, carcinogenesis, tumor biology and heterogeneity; retroviruses, oncogenes, cell cycle control, genetics of cancer, tumor immunology; treatment strategies.

INTD 522 Infection and Host Responses (4, Sp) Overview of microbes, their life cycles and the host response they elicit, evade or exploit, including the manipulation and the malfunction of the immune system.

INTD 531 Cell Biology (4, Fa) Current perspectives on major research areas in cell biology. Emphasis will be on in-depth examination of cellular structures, regulatory processes, intra-cellular routing and targeting, and cell/environmental interactions.

INTD 535 Continuing Introduction to Clinical Medicine for M.D./Ph.D. Students (1, FaSp) Course for M.D./Ph.D. students in Ph.D. years designed to allow maintenance and improvement of clinical skills prior to re-entry in clinical rotations in the Year III medical curriculum. Open only to medical students who have completed Years I and II. Graded CR/NC.

INTD 537 The Structure of Scientific Revolutions in Molecular Biology (1, Irregular) A course in how scientists make breakthrough discoveries and whether there are predictable ingredients for significant changes in perception of the living system. Open only to graduate-level students in any of the biological sciences. *Recommended preparation:* one year in cell and molecular biology.

INTD 549 Protein Chemistry — Structure and Function (4, Sp) Chemistry of peptides and proteins; protein structure and folding; molecular basis of protein action. (Duplicates credit in former BIOC 549.) *Prerequisite:* general biochemistry.

INTD 550 Introduction to Pathology (4, Fa) Normal histology and introduction to basic pathological concepts. Provides a solid and basic understanding of normal structures and how they relate to function.

INTD 551 Pathobiology of Disease (4, Sp) Relationship between histopathological and clinical manifestations of disease and their underlying molecular mechanisms. Topics include inflammatory, developmental, environmental, degenerative, and neoplastic disease processes. *Prerequisite:* INTD 550.

INTD 555 Biochemical and Molecular Bases of Disease (4) Biochemical and molecular abnormalities in disease states. *Prerequisite:* general biochemistry.

INTD 561 Molecular Genetics (4, Sp) Prokaryotic and eukaryotic molecular genetics: DNA and RNA structure and function; biochemistry and molecular biology of replication, transcription, RNA processing, translation, and regulation of gene expression. (Duplicates credit in former BIOC 561.) *Prerequisite:* INTD 571.

INTD 567 Molecular and Cellular Neurobiology (4) (Enroll in NEUR 531)

INTD 571 Biochemistry (4, Sp) Physical-chemical basis of life processes: protein structure and enzyme function; synthesis and metabolism of carbohydrates, lipids, amino acids, and nucleotides. (Duplicates credit in former BIOC 441.) *Prerequisite:* open to qualified students.

INTD 572 Systems Physiology and Disease I (4, Fa) Mammalian organ systems operation during health, and pathophysiologic analysis of related diseases with focus on muscle, respiratory, cardiovascular and renal systems. Faculty from basic and clinical sciences. Open to graduate students in biomedical science only.

INTD 573 Systems Physiology and Disease II (4, Sp) Mammalian organ systems operation during health, and pathophysiologic analysis of related diseases with focus on neuroscience, immunology, metabolism, endocrine, reproduction, GI and liver. Faculty from basic and clinical sciences. Open to graduate students in biomedical science only.

INTD 574 Systems Biology and Disease Seminar (1, max 16, FaSp) Selected topics in systems biology and disease. Graded CR/NC. Open only to integrative biology of disease Ph.D. students.

INTD 620 Medical Students Elective Program (0) Opportunities for medical students as preceptors in research laboratories or in field medical service under guidance of sponsors approved by faculty committees. Graded CR/NC.

INTD 621ab Introduction to Clinical Medicine (ICM) for HTE (a: 3, Fa; b: 3, Sp) A strongly patient-centered course in which both Ph.D. engineering and M.D. students experience how doctors handle communications, basic diagnostic thinking and engineering perspectives. Open only to Health, Technology and Engineering students. Graded CR/NC.

INTD 622L Pre-clinical System Block for Health, Technology and Engineering (3-9, FaSp) A three-to-nine week block of lectures and laboratories focused on particular body system (e.g., cardiovascular, renal, etc.). Open only to Health, Technology and Engineering students. Graded CR/NC.

INTD 650 Stem Cell Biology and Medicine (4, FaSpSm) Basic principles, available embryonic and adult stem cells, principles of organogenesis and regeneration, animal models, delivery of engineered tissues to patients, promise and limitations of stem cells. Open to master's and Ph.D. students on the Health Sciences Campus and to medical and post-doctoral fellow trainees only.

Master of Academic Medicine

Keith Administration Building 211

1975 Zonal Avenue

Los Angeles, CA 90033

(323) 442-2372

FAX: (323) 442-2051

Email: nyquist@usc.edu

Program Director: Julie G. Nyquist, Ph.D.

Faculty

Professors: Donna Elliott, M.D., Ed.D. (*Pediatrics*); Win May, M.D., Ph.D. (*Pediatrics/Medical Education*); Julie G. Nyquist, Ph.D. (*Pediatrics/Medical Education*); Dwight Warren, III, Ph.D. (*Cell and Neurobiology*); Beverly Wood, M.D., Ph.D. (*Pediatrics/Medical Education*)

Associate Professors: Kathleen Besinque, Pharm.D., M.S.Ed. (*Pharmacy*); Jerry Gates, Ph.D. (*Family Medicine*); Win May, M.D., Ph.D. (*Pediatrics/Medical Education*)

Assistant Professors: Dixie Fisher, Ph.D. (*Pediatrics/Medical Education*); Lori Marshall, Ph.D., MSN (*Pediatrics*); Niurka Rivero, M.D. (*Pediatrics*); Maura Sullivan, Ph.D., MSN (*Surgery*); Janet Trial, Ed.D., CNM/MSN (*Obstetrics/Gynecology*); Samuel Yanofsky, M.D., M.S.Ed. (*Anesthesiology*)

The Master of Academic Medicine is offered by the Keck School of Medicine in collaboration with the Schools of Dentistry and Pharmacy. The goal is to develop leaders who will create and enhance academic and training programs for health care professions globally. Academic medicine is defined in broad terms as relating to those who lead training worldwide in medicine or in other health care related fields. Enacting this vision is possible due to the flexible delivery model selected. The program will employ a hybrid model, combining on-campus face-to-face sessions, blended with online course work. During the 32-unit program, the majority of sessions will be delivered using interactive online delivery methods. All students will also be on campus for one-week intensive sessions in the spring of each year, which focus on community building and the development and evaluation of skills.

The program addresses the unique population of medical and health professions faculty who are focused on leading the academic enterprise for health professionals at the undergraduate, graduate and continuing education levels. Our graduates will be positioned to guide future generations of health professionals around the world toward better meeting the health needs of our global society. For those with a clear focus on the academic enterprise, a complementary degree in academic medicine offers the specialized skills needed to lead worldwide development of enhanced training for health professionals, increases professional capacity and provides new opportunity for promotion. The audiences for this degree will typically have primary professional degrees in health fields (e.g., M.D., DDS, DPT, R.N., MSN, P.A., DVM, D.O., Pharm.D., D.C., DOM). The Master of Academic Medicine will provide the needed complementary training for clinician educators.

Admission

Applicants for admission to the Master of Academic Medicine program are generally expected to have an advanced degree in a health profession. Proof of graduation is required. For applicants who do not have a degree in a health profession, a bachelor's degree or its equivalent from an accredited institution is required, a grade point average of 3.0 (A = 4.0) is usually expected as well as satisfactory scores on the Graduate Record Examinations (GRE) General Test and three letters of recommendation. For specific information on admission and application procedures, contact the Office of Medical Education, (323) 442-2372.

Students are admitted for the academic year beginning in the fall, although those admitted prior to March 15 may enroll in summer courses. Although there is no formal application deadline, complete applications received before March 1 will be given priority. Application inquiries should be made to: Master of Academic Medicine Program, University of Southern California, Office of Medical Education, 1975 Zonal Avenue, KAM 211, Los Angeles, CA 90033, telephone (323) 442-2372.

Satisfactory Academic Progress

A graduate GPA of at least 3.0 is required at all times. Any student whose graduate GPA falls below 3.0 will be placed on academic probation. Students on academic probation who do not raise their GPA to 3.0 after two semesters of written notification of academic probation will be academically disqualified.

A minimum of 32 units of graduate-level course work is required.

Degree Requirements

ACADEMIC COURSES (26 UNITS)		UNITS
ACMD 501	Introduction to Academic Medicine Worldwide	3
ACMD 502	Becoming a Leader in Academic Medicine Worldwide	3
ACMD 503	Leading Change in Academic Medical Centers	3
ACMD 511	Competencies in Academic Medicine and Health I	3
ACMD 512	Competencies in Academic Medicine and Health II	3
ACMD 513	Professionalism in Academic Medicine and Health	3
ACMD 514	Accreditation and Program Evaluation in Academic Medicine	3
ACMD 591	Designing Research on Innovations in Academic Medicine	2
ACMD 592	Implementing Research on Innovations in Academic Medicine	2
ACMD 621	Capstone Portfolio for the Master of Academic Medicine	1

Electives (6 units)

Six units of electives may be selected from the recommended courses below, or these may be replaced with approved courses at the 500 level or within USC that equal 6 units.

ACMD 593	Foundations of Scholarly Writing in Academic Medicine	1
ACMD 598	Fieldwork in Designing Innovations for the Health Professions	1-3
ACMD 604	Supporting the Educational Enterprise in Academic Medicine	3
ACMD 605	Faculty Development for Health Sciences Faculty Educators	2
ACMD 615	Maintenance of Competence in the Health Professions	2
INTB 603	Systematic Approach to Scientific Writing	2
MPTX 517	Structure and Management of Clinical Trials	4
PM 513	Experimental Designs	3

Courses of Instruction

ACADEMIC MEDICINE (ACMD)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

ACMD 501 Introduction to Academic Medicine Worldwide (3) Introduces the master's program; includes historical development of training in the health professions; current issues, challenges and opportunities in academic medicine and health worldwide. Open only to Academic Medicine majors.

ACMD 502 Becoming a Leader in Academic Medicine Worldwide (3) Current approaches to leadership within the context of global academic medicine and health professions education; individual applications, group dynamics, teamwork, and interpersonal skill enhancement. Open only to Academic Medicine majors.

ACMD 503 Leading Change in Academic Medical Centers (3) Exploration and practice of skills for promoting programs within academic medicine and health professions' education; building trust, organizational change, conflict resolution, negotiation, and managing resources. Open only to Academic Medicine majors.

ACMD 511 Competencies in Academic Medicine and Health I (3) Acquisition of cognitive knowledge and problem-solving skills in health professions worldwide; instructional methods, assessment techniques, designing curricula for health professions education. Open only to Academic Medicine majors.

ACMD 512 Competencies in Academic Medicine and Health II (3) Learning theory, teaching methods, assessment techniques related to acquisition and reinforcement of competencies related to patient care, practice-based learning and improvement and systems-based practice. Open only to Academic Medicine majors.

ACMD 513 Professionalism in Academic Medicine and Health (3) Acquisition and evaluation of interpersonal and communication skills and professionalism including ethics and cultural competence; within the context of health care disparities and health initiatives. Open only to Academic Medicine majors.

ACMD 514 Accreditation and Program Evaluation in Academic Medicine (3) Evaluating health professions training programs within guidelines of relevant accreditation organizations; models of evaluation, designing plans and tools for evaluation of program elements. Open only to Academic Medicine majors.

ACMD 591 Designing Research on Innovations in Academic Medicine (2) Introduction to design and scholarly review of innovations in health professions education; needs assessment, problem selection, use of research methods to study an innovation. Open only to Academic Medicine majors.

ACMD 592 Implementing Research on Innovation in Academic Medicine (2) Mentored research on an innovation in academic medicine leading to the master's degree. The project will result in a formal written research report. Open only to Academic Medicine majors. *Prerequisite:* ACMD 591.

ACMD 593 Foundations of Academic Writing (1) Academic writing for conference papers, grant proposals and journal articles. Open only to Academic Medicine majors. *Recommended preparation:* A completed study of an innovation in academic medicine or other health-related field that is ready to move to publication.

ACMD 598 Fieldwork: Designing Innovations for the Health Professions (1-3, max 3) Individual projects designing curricular or other innovations for the home program as an application of Year 1 concepts and as part of the capstone experience. Open only to Academic Medicine majors. *Prerequisite:* ACMD 591.

ACMD 604 Supporting the Educational Enterprise in Academic Medicine (3) Explores support functions in academic medical centers and health professions schools; financial, scientific, educational, faculty and student affairs departments, and offices of medical education. Open only to Academic Medicine majors.

ACMD 605 Faculty Development for Health Sciences Faculty Educators (2) Role of faculty development programs in health professions schools; tools for delivering effective continuing education and faculty development; models for mentoring clinical faculty. Open only to Academic Medicine majors.

ACMD 615 Maintenance of Competence in the Health Professions (2) Maintenance of competence and continuing professional development (CPD) of physicians and other health care professionals; trends, needs, strategies, assessing outcomes, examining effectiveness of CPD programs. Open only to Academic Medicine majors.

ACMD 621 Capstone Portfolio for the Master of Academic Medicine (1) Role of portfolios for teachers and learners; develop a personal capstone portfolio that represents each learner's accomplishment of the core competencies of the MACM program. Open only to Academic Medicine majors. Graded CR/NC.

Master of Science in Clinical, Biomedical and Translational Investigations

Administration

Tel: (323) 442-2965

Email: msclnbio@usc.edu

Program Co-Directors

Stanley P. Azen, Ph.D., *Professor, Co-Director of Biostatistics, Preventive Medicine, Co-Director CETCD*

Michael L. Paine, B.Sc., B.D.S., Ph.D., *Associate Professor, Director, Graduate Program in Craniofacial Biology*

The Master of Science in Clinical, Biomedical, and Translational Investigations (CBTI) is a joint effort to train medical students, fellows or other health professionals, including faculty and other scientists conducting clinical-related research, in clinical research methods to translate clinical, biomedical and technological discoveries into advances in population-based, clinical or basic science research. The M.S. Program of Clinical, Biomedical, and Translational Investigations (CBTI) is available to medical students who have completed their second year of medical school, and pre-doctoral students who are interested in expanding their pre-doctoral training to include methodology associated with conducting translational research. Pre-doctoral students will earn a joint degree (Ph.D. in their research area and an M.S. in CBTI). In addition, the M.S. CBTI Program is tailored to MDs doing fellowships at USC or Children's Hospital Los Angeles (CHLA), faculty interested in expanding their research careers, or are recipients of Young Investigator Awards, including Southern California Clinical Translational Science Institute's (SC CTSI) Center for Education, Training, and Career Development K and T Awardees. Tracks include: 1) Clinical Translational Research, 2) Community-based Intervention Trials, 3) Design, Conduct and Analysis of Clinical Studies, 4) Epidemiology and Disease Etiology, 5) Health Outcomes Research, 6) Environmental Epidemiology, 7) Molecular Biology, 8) Cell Biology, 9) Vision Science, and 10) Alternative Options Track.

The M.S. program in Clinical and Biomedical Investigations is designed to train students, fellows and faculty for future independent research careers in an academic, government or private sector setting. The objective of the M.S. program is to produce a clinical researcher with either an in-depth knowledge in laboratory methodologies or statistical and analytic skills in population-based, clinical studies or outcomes research. The program gives students a solid background in the methodological aspects of translational research, and in statistical thinking as applied to molecular epidemiology, as well as a solid grounding in biostatistical, epidemiological methods, and community based intervention strategies.

Admission

Admission Requirements

Applicants must apply to the Graduate School and meet the minimum requirements for admission to the Graduate School. The Departments of Preventive Medicine, Cell and Neurobiology, Family Medicine, and the Center for Education, Training and Career Development (CETCD) jointly administer the program.

The program will consider applicants who satisfy all requirements for admission to the Graduate School. For the M.S. program in Clinical and Biomedical Investigations, MCAT scores may be substituted for the GREs. Applicants not meeting Graduate School requirements for regular standing may, with approval of the Graduate School, be conditionally admitted. Regular standing is contingent upon maintaining a GPA of 3.0 in the first 12 units of graduate studies. All graduate students must maintain a GPA of 3.0 throughout their graduate studies.

General Requirements

Graduation requires the completion of a minimum of 29 units, of which a minimum of 13 units are didactic course credits taken in the first year (including summer sessions), with the remaining units being directed to: a) PM 590 (directed research, 1–12 units) and PM 594ab (thesis, 4 units) taken in the second year. The equivalent of one year of full-time effort must be devoted to research leading to a master's thesis. The thesis provides a structure for the development of a plan to address a research problem and a suitable approach to the analysis and presentation of the results.

Because the background and interests of applicants varies widely, one of the co-directors will consult with each student prior to the first year in order to design an individualized schedule of recommended courses, or this may be negotiated with a student's faculty sponsor. At the end of the first year, the trainee must submit a final program plan to the co-directors. This will summarize the courses taken, the proposed thesis title, and the names and credentials of the M.S. thesis committee. One of the members of the M.S. thesis committee will be the trainee's research adviser and will serve as the chair of the committee. At least one member of the thesis committee must be from outside the student's department. For faculty, at least two members of the thesis committee must be from outside the student's department.

For those trainees or SC CTIS'S CETCD K and T awardees who do not wish to pursue an M.S. degree, the school offers a certificate in clinical, biomedical, and translational investigations (CBTI). The certificate program requires completion of 12 credits, and a minimum of 6 months of practical research experience working on a research project (PM 590) approved by either an Oversight Committee or the CETCD'S K and T Award Committee Review Process.

Students are expected to attend the three day workshop on NIH proposal development offered by Thomas Ogden, M.D., Ph.D., and a workshop on the principles of scientific manuscript preparation.

Certificate Program

Students who do not wish to pursue an M.S. degree may earn a university Certificate in Clinical, Biomedical, and Translational Investigations. The certificate program

requires 12 credits and a minimum of six months of practical experience working on a research project approved by the oversight committee.

Recommended Core Courses for Each Research Track

CLINICAL TRANSLATIONAL RESEARCH (13-16 UNITS)

PM 510L	Principles of Biostatistics	4
PM 512	Principles of Epidemiology	4
PM 523	Design of Clinical Studies, or	3
PM 612abc	Clinical Translational Research	12

Electives (Pick one course)

BIOC 543	Human Molecular Genetics	4
MPTX 511	Introduction to Medical Product Regulation	3
MPTX 602	Science, Research, and Ethics	2
PM 511b	Data Analysis	4
PM 512	Principles of Epidemiology	4
PM 518a	Statistical Methods for Epidemiological Studies I	3
PM 570	Statistical Methods in Human Genetics	4
RSCI 530	Translational Medicine: An Overview	2

COMMUNITY-BASED INTERVENTION TRIALS (16 UNITS)

PM 512	Principles of Epidemiology	4
PM 528	Program Design and Evaluation	4
PM 563	Organizing and Mobilizing Communities for Public Health	4
Electives (Pick one course)		
PM 526	Communications in Public Health	4
PM 562	Intervention Approaches for Health Promotion and Disease Prevention	4

DESIGN, CONDUCT AND ANALYSIS OF

CLINICAL STUDIES (18 UNITS)

PM 510L	Principles of Biostatistics	4
PM 511a	Data Analysis	4
PM 523	Design of Clinical Studies	3
PM 538	Introduction to Biomedical Informatics	3
PM 570	Statistical Methods in Human Genetics	4

EPIDEMIOLOGY AND DISEASE ETIOLOGY (14-15 UNITS)

PM 510L	Principles of Biostatistics	4
PM 512	Principles of Epidemiology	4
PM 517a	Research Methods in Epidemiology	3

Electives (Pick one course)

PM 518a	Statistical Methods for Epidemiological Studies I	3
PM 527	Epidemiology of Infectious Disease	4

PM 529	Environmental and Occupational Health: An Epidemiological Approach, or	
PM 533	Genetic and Molecular Epidemiology	3

HEALTH OUTCOMES RESEARCH (16 UNITS)

PM 511a	Data Analysis	4
PMEP 538	Pharmaceutical Economics	4
PMEP 539	Economic Assessment of Medical Care	4
PMEP 540ab	Seminar in Pharmaceutical Economics and Policy	2-2

ENVIRONMENTAL EPIDEMIOLOGY (17-18 UNITS)

PM 510L	Principles of Biostatistics	4
PM 512	Principles of Epidemiology	4
PM 518a	Statistical Methods for Epidemiological Studies I	3
PM 529	Environmental Health: An Epidemiological Approach	3

Electives (Pick one course)

PM 511a	Data Analysis	4
PM 533	Genetic and Molecular Epidemiology	3
PM 570	Statistical Methods in Human Genetics	4
PM 599	Special Topics	4

MOLECULAR BIOLOGY (16 UNITS)

INTD 531	Cell Biology	4
INTD 561	Molecular Genetics	4
INTD 571	Biochemistry	4

Electives (Pick one course)

BIOC 543	Human Molecular Genetics	4
INTD 504	Molecular Biology of Cancer	4
INTD 555	Biochemical and Molecular Bases of Disease	4
MICB 551	Prokaryotic Molecular Genetics	4

CELL BIOLOGY (15 UNITS)

INTD 531	Cell Biology	4
INTD 571	Biochemistry	4
PATH 552a	Methods in Experimental Pathology	3

Electives (Pick one course)

INTD 504	Molecular Biology of Cancer	4
INTD 555	Biochemical and Molecular Bases of Disease	4

VISION SCIENCE (19-26 UNITS)

INTD 501	Recent Advances in Vision Science	1, max 4
INTD 531	Cell Biology	4
INTD 571	Biochemistry	4
INTD 573	Systems Physiology and Disease II	4
PHBI 608ab	Advanced Cellular, Molecular and Systemic Physiology	2 or 4 each
PSCI 667	Intracellular Drug Delivery and Targeting	2

ALTERNATIVE OPTIONS TRACK (MINIMUM 16 UNITS)

Courses are determined by mentor and student, based on research interests, with approval from the Oversight Committee.

Seminars/Workshops

Participation is required in a Recent Advances Journal Club to learn how to read papers critically and develop the speaking skills necessary to explain a research paper. Faculty members in the program rotate as course directors in order to emphasize new topics. Students are expected to attend the three-day workshop on NIH Proposal Development offered by Thomas Ogden, Ph.D., and a workshop on the principles of scientific manuscript preparation.

Master of Science in Global Medicine

Keith Administration Building 317

1975 Zonal Avenue

Los Angeles, CA 90089-9024

Tel: (323) 442-3141

FAX: (323) 442-1766

keck.usc.edu/msgm

Program Director: Elahe Nezami, Ph.D.

The Master of Science in Global Medicine (MSGM) is offered by the Department of Educational Affairs of the Keck School of Medicine. The program aims to train medical, dental and pharmacy students; current physicians and allied health professionals; and those planning to pursue degrees in the allied health professions to analyze and address critical issues in global medicine. The program provides a solid foundation in basic science while also exposing students to a broad scope of pertinent issues in global medicine. The program offers an advanced standing option for physicians, dentists and current medical/dental students from accredited institutions. Students admitted to the advanced standing option may use previous equivalent course work for 8 units of credit toward MEDS 503L Core Principles System I and MEDS 504L Core Principles System II course requirements. The advanced standing option allows students to bypass the foundation course work and focus on globally oriented course work.

By providing the knowledge and training necessary to address current and future global medical challenges, the M.S. in Global Medicine program responds to the Institute of Medicine's recommendation that the education of health professionals include course work that promotes literacy in global medicine. In addition to gaining a strong medical science foundation, students are immersed in course work that examines methods used to create innovative programming, solutions and responses to global health challenges, thereby furnishing them with the problem-solving skills and analytical frameworks essential to their future career paths. Through partnerships with the Marshall School of Business and the Viterbi School of Engineering, the M.S. in Global Medicine also includes a management track for students who intend to pursue international health management.

Upon completion of the M.S. in Global Medicine, students will be equipped to serve as leaders within the allied health field, including, but not limited to: medicine, pharmacy, dentistry and nursing. In addition, graduates

will be prepared to collaborate with or seek employment from a variety of international aid, nonprofit, and global health organizations such as: the United Nations, the International Red Cross, United Nations Joint Programme on HIV/AIDS, United Nations Children's Fund, World Health Organization, World Bank and the Centers for Disease Control and Prevention.

Admission

Applicants for admission to the program must have a bachelor's degree or its equivalent from an accredited institution and have earned a GPA of 3.0 (A = 4.0) in undergraduate work. Prerequisite undergraduate course work for Clinical Track applicants must include one year of general biology, one year of general chemistry, one year of organic chemistry and one semester of calculus. Applicants to the Management Track should consult with advisers for prerequisite exceptions.

All applicants are required to have taken the Graduate Record Examinations (GRE) General Test, the Dental Admission Test (DAT) or the Medical College Admission Test (MCAT). A minimum score of 300 (1000 on old scale) on the GRE, 18 on the DAT or 28 on the MCAT is required. International Medical Graduates (IMGs) from accredited institutions can submit their USMLE results in lieu of GRE, DAT or MCAT scores. Applicants must also supply three letters of recommendation from evaluators qualified to assess their potential for graduate work. If applying for the advanced standing option, U.S. applicants must have successfully completed their first year of an M.D. (Doctor of Medicine) or DDS (Doctor of Dental Surgery) program from a U.S.-accredited institute; international applicants must have earned a bachelor's degree in medicine and surgery from an accredited institute.

Applicants must supply a completed application for graduate studies including: transcripts from all institutions previously attended, standardized test scores and three letters of recommendation. Applications are considered for enrollment in both fall and spring semesters. For further information contact: Dr. Elahe Nezami, Master of Science in Global Medicine Program, 1975 Zonal Ave., KAM 317, Los Angeles, CA 90089-9024, Tel: (323) 442-3141, Fax: (323) 442-1766.

Advisement

The program recommends that students meet with an academic adviser of the program each semester prior to registration.

Satisfactory Academic Progress

A graduate GPA of at least 3.0 is required at all times. Any student whose graduate GPA falls below 3.0 will be placed on academic probation. Students on academic probation who do not raise their GPA to 3.0 after two semesters of written notification of academic probation will be academically disqualified. A minimum of 32 units of graduate level course work is required for graduation from the clinical or management track. A minimum of 24 units of graduate level course work is required for graduation with the advanced standing option.

Degree Requirements

CORE COURSES		UNITS
<i>GM Clinical Track Core</i>		
MEDS 500	Basic Concepts in Global Health	4
MEDS 503L	Core Principles System I	4
MEDS 504L	Core Principles System II	4
<i>GM Management Track Core</i>		
GSBA 520	Business Fundamentals for Non-Business Professionals	3
IOM 582	Service Management: Economics and Operations	3
MEDS 500	Basic Concepts in Global Health	4
MEDS 502	Global Epidemiology of Diseases and Risk Factors	4
<i>GM Advanced Standing Track Core</i>		
MEDS 500	Basic Concepts in Global Health	4
MEDS 502	Global Epidemiology of Diseases and Risk Factors	4
ELECTIVE COURSES		UNITS
(GM Clinical track student must complete at least 20 GM elective units; GM Management track students must complete at least 12 GM electives units; GM Advanced Standing track student must complete at least 16 GM elective units)*		
<i>GM Electives</i>		
MEDS 501	Critical Issues in Global Health	4
MEDS 502	Global Epidemiology of Diseases and Risk Factors	4
MEDS 510	Global Health Modules, Malaria	2
MEDS 511	Global Health Modules, Tuberculosis	2
MEDS 512	Global Health Modules, Maternal and Child Health I	2
MEDS 513	Global Health Modules, Maternal and Child Health II	2
MEDS 514	Global Health Modules, Tropical Diseases	2
MEDS 515	Global Health Modules, HIV/AIDS	2
MEDS 516	Cultural Competence in Health and Medicine	2
MEDS 517	Health and Human Rights	2
MEDS 520	Medical Spanish for the Health Professions	2
MEDS 521	Emerging and Re-emerging Infectious Diseases	2
MEDS 522	Human Hepatitis Viruses	2
MEDS 523	Global Toxicity and Carcinogenesis	2
MEDS 524	Grantwriting for Non-Government Organizations	2
MEDS 525	Global Mental Health	2
MEDS 526	Alternative and Eastern Medicine: A Biomedical Approach	2

MEDS 528	Global Health Modules, Sexually Transmitted Infections	2
MEDS 530abc	Foundation of Medicine: Anatomy, Physiology, and Pathology	4-4-4
MEDS 535	Culture, Lifestyle, and Health	2
MEDS 550	Clinical Medicine and Healthcare Reform in Taiwan	2
MEDS 551	Clinical Medicine and Socioeconomic Factors in Uganda	2
MEDS 552	Clinical Medicine and Healthcare Reform in Jordan	2
MEDS 553	Clinical Medicine and Healthcare Challenges in India	2
MEDS 590	Directed Research	2-4
MEDS 599	Special Topics	2-4
<i>GM Management Track Electives</i>		
ISE 507	Six-Sigma Methods and Applications	3
ISE 508	Health Care Operations Improvement	3
MKT 565	Global Marketing	3
MOR 470	Global Leadership	4
MOR 569	Negotiation and Deal-making	3

Note: On a case-by-case basis, GM students and GM Management students may take classes outside their particular group.

**Students will take 8 units of electives that have a global focus, chosen in consultation with their adviser from among MEDS courses.*

Pharm.D./Master of Science, Global Medicine

The dual degree in Pharmacy and Global Medicine is designed for students who are interested in providing pharmaceutical care to underserved populations around the world. Students enrolled in this dual degree program will benefit from an advanced understanding of the role of, and issues surrounding, modern medicine in developing countries.

Requirements

Students must gain admission to and fulfill the degree requirements for both programs, which include 138 units for the Doctor of Pharmacy and 24 units for the M.S. in Global Medicine. Six units of MEDS elective units can be used toward the Pharm.D. elective requirement, and PHRD 503 and PHRD 504 substitute for MEDS 503 and MEDS 504.

Program Adaptation

Because MEDS 503 and MEDS 504, core requirements for the M.S. in Global Medicine program, cover the same material as PHRD 503 and PHRD 504, the Pharm.D./Global Medicine dual degree program substitutes PHRD 503 and PHRD 504 for MEDS 503 and MEDS 504 as core requirements for the dual degree.

Graduate Certificate in Global Medicine

The certificate program in global medicine is for students who do not wish to pursue an M.S. degree in global medicine, but hope to pursue or expand careers in global health care. Students will study current topics in global health and health care, and will have a strong grounding in cultural competence, specific diseases, and creating and implementing health interventions in developing countries.

Students take 16 units of graduate course work that may not be used or have been used for any other degree or certificate program. These units include two core classes and eight units of electives, as follows:

CORE COURSES		UNITS
MEDS 500	Basic Concepts in Global Health	4
MEDS 502	Global Epidemiology of Diseases and Risk Factors	4

ELECTIVE COURSES:

Students will take 8 units of electives, chosen in consultation with their adviser, from among all MEDS courses numbered 510 or above. For example, there are groups of courses relevant to women's and family health; infectious diseases; health care in developing countries; working with diverse populations in the United States, etc.

Courses of Instruction

MEDICAL SCIENCES (MEDS)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

MEDS 500 Basic Concepts in Global Health (4, FaSpSm) Exploration of global health issues facing resource-poor societies; emphasizes contributing factors including behavioral and physiological bases, economic, social, and political context.

MEDS 501 Critical Issues in Global Health (4, FaSpSm) Evaluation of government and non-government organizations' new global health responses, and critical issues affecting global health including: environment, workforce conditions, obesity, nutrition, drugs, poverty.

MEDS 502 Global Epidemiology of Diseases and Risk Factors (4, FaSpSm) Survey of major populations' crises and risk factors accounting for global health challenges. Evaluation of case studies of global health interventions and effective methodologies.

MEDS 503L Core Principles System I (4, FaSpSm) Introduction to basic medical concepts and biological system functions; examination of core principles of science and medical treatment.

MEDS 504L Core Principles System II (4, Fa) Continuation of concepts from MEDS 503L. Basic medical concepts and biological system functions; examination of core principles of science and medical treatment. *Prerequisite:* MEDS 503L.

MEDS 510 Global Health Modules, Malaria (2, FaSpSm) Critical issues in international control and treatment of malaria. Exploration of biological and epidemiological fundamentals of human-parasite interaction, including dynamics of transmission among populations.

MEDS 511 Global Health Modules, Tuberculosis (2, FaSpSm) Exploration of biological and epidemiological fundamentals of tuberculosis including dynamics of transmission among populations. Overview of clinical manifestations, diagnosis, and treatment of infections.

MEDS 512 Global Health Modules, Maternal and Child Health I (2, FaSpSm) Biopsychosocial, cultural and economic aspects of women's health: pregnancy, childbirth, marriage. Examination of health promotion and policy efforts to improve women's health globally.

MEDS 513 Global Health Modules, Maternal and Child Health II (2, FaSpSm) In-depth examination of women's health issues; health promotion and policy efforts to improve women's health globally.

MEDS 514 Global Health Modules, Tropical Disease (2, FaSpSm) Examination of prevalent tropical diseases: epidemiology, clinical manifestations, treatment, impact on economies of tropical countries. Key issues related to these diseases; World Health Organization responses.

MEDS 515 Global Health Modules, HIV/AIDS (2, FaSpSm) HIV epidemiology, basic biology of transmission and pathophysiology, associated opportunistic infections, and challenges to providing care in the developing world, including government responses.

MEDS 516 Cultural Competence in Health and Medicine (2, FaSpSm) Practical approach to the development of professional skills for providing culturally sensitive clinical health services to ethnically and linguistically diverse patients.

MEDS 517 Health and Human Rights (2, FaSpSm) The relationship between health and human rights, and the study of human rights issues relevant to health care professionals.

MEDS 520 Medical Spanish for the Health Professions (2, FaSpSm) Spanish language course for students planning to enter the health professions.

MEDS 521 Emerging and Re-emerging Infectious Diseases (2, FaSpSm) Exploration of the threat of major worldwide epidemics and diseases with a focus on the recent emergence of new plagues.

MEDS 522 Human Hepatitis Viruses (2, FaSpSm) Human hepatitis and the viruses that cause them, how they are spread, symptoms, treatment, and prevention.

MEDS 523 Global Toxicity and Carcinogenesis (2, FaSpSm) Covers the occurrences of toxic substances and the toxicity/diseases they cause, and chemical carcinogens and the types of cancer they cause worldwide.

MEDS 524 Grantwriting for Non-Government Organizations (2, FaSpSm) Instruction on the process and methods of writing effective grants from identifying appropriate funders to implementing project upon receipt of funding award.

MEDS 525 Global Mental Health (2, FaSpSm) Examines the major mental health diagnoses from clinically relevant perspectives and their prevalence in specific geographical regions around the world.

MEDS 526 Alternative and Eastern Medicine: A Biomedical Approach (2, FaSpSm) Exploration of issues of complementary and alternative medicine (CAM) and traditional Eastern medical views of health and illness from a Western biomedical perspective.

MEDS 528 Global Health Modules, Sexually Transmitted Infections (2, SpSm) Examines clinically relevant perspectives from distinguished international authors on STI issues and the devastating effect on particular geographical regions around the world.

MEDS 527 Zoonotic Infectious Diseases (2, SpSm) Background information on a group of infections that are transmitted via animal contact. Understanding of the epidemiology, clinical manifestations, treatment, and impact of the diseases on the economies of the countries in which they are found. Open only to graduate students. *Recommended preparation:* MEDS 500.

MEDS 529 Refugee Health Care (2) Introduction to refugee health care and life events which impact health. Discuss medical needs of long-term displaced populations with specific case studies. Open only to graduate students.

MEDS 530abc Foundation of Medicine: Anatomy, Physiology, and Pathology (4-4-4, FaSpSm) *a:* Fundamentals of physiology, chemistry, anatomy, biochemistry and microbiology, as well as pharmacological issues, mathematical basis of lab instruments or techniques, and computational modeling. *b:* The basics of human anatomy (gross anatomy, histology, radiographic anatomy), physiology (cellular physiology, organ system areas) and pathology (general, systemic, cellular pathology). *c:* Continues material from MEDS 530a and MEDS 530b, covering human anatomy (gross anatomy, histology, radiographic anatomy), physiology (cellular physiology, organ systems) and pathology (general, systemic, cellular pathology).

MEDS 535 Culture, Lifestyle, and Health (2, FaSpSm) Overview of national and international variations in health status indicators in regard to cultural and lifestyle differences.

MEDS 550 Clinical Medicine and Health Care Reform in Taiwan (2, Sm) Two-week in-depth study abroad in Taipei, Taiwan, focused on understanding Taiwan's health care system, health priorities, and needs.

MEDS 551 Clinical Medicine and Socioeconomic Factors in Uganda (2, Sm) Two-week course that provides students with hands-on experience in clinical medicine/public health and exposure to the various socioeconomic factors impacting health in the developing world.

MEDS 552 Clinical Medicine and Health Care Reform in Jordan (2, Sm) A two-week, in-depth study abroad course that explores the economic, social, political, and health issues in the Middle East region and specifically Jordan.

MEDS 553 Clinical Medicine and Health Care Challenges in India (2, Sm) Two-week study abroad course that explores the health dynamics and health care settings of India.

MEDS 590 Directed Research (1-12, max 12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MEDS 597ab Health Technology Internship (2-2, FaSpSm) Internship course on the use of new technology based on sensors and wireless communications to the health care industry. Open only to M.S., Electrical Engineering (Wireless Health Technology) students. Graded IP/CR/NC.

MEDS 599 Special Topics (2-4, FaSpSm) Lecture and discussion focused on specific topics within global medicine. Course topic will vary from semester to semester.

Certificate in Health, Technology and Engineering (HTE@USC)

Academic Director: Terry Sanger, M.D., Ph.D., Provost
Associate Professor of Biomedical Engineering, Neurology, Biokinesiology, and Physical Therapy
Administrative Director: George Tolomiczenko, Ph.D.,
Assistant Professor, Neurology

This program offers current second-year USC Ph.D. engineering students and first-year M.D. students an opportunity to learn about and gain experience in medical device and process innovation. Through project-based and interdisciplinary collaboration, students will augment their current programs with a set of courses and lab experiences linking medical and engineering research groups. By applying design-informed approaches toward problem identification and solution prototyping, students will be involved in all the steps of medical device innovation from conception to commercialization. The program aims to create interdisciplinary, boundary-spanning, inventive entrepreneurs seeking early practical experience with device and method innovation in health care. Program participants will form bonds with a group of like-minded medical students and engineers who will be their mentors, colleagues and contacts as they advance in their careers.

The courses unique to the program include a seminar sequence (Topics in Health, Technology and Engineering), which must be taken during the first two years of involvement with the HTE@USC program, a case studies sequence taken during the second year and a research course to earn project-related credits:

COURSES		UNITS
BME 566abcd	Topics in Health, Technology and Engineering	2-2-2-2
BME 567ab	Case Studies in Health, Technology and Engineering	2-2
BME 790	Research	12

Other required courses that are part of the M.D. curriculum (Ph.D. students enroll in INTD course versions of the same courses open only to HTE students on CR/NC basis):

INTD 621ab	Introduction to Clinical Medicine (ICM) for HTE	3-3
INTD 622L	Pre-clinical System Block for Health, Technology and Engineering	3-9

Candidates interested in applying should contact HTE@usc.edu via email.

Undergraduate Minor Program

Minor in Health Care Studies

The USC Dornsife College of Letters, Arts and Sciences and the Keck School of Medicine offer an interdisciplinary minor in health care studies. This minor is targeted to those undergraduates who wish to pursue a postgraduate career in health care or health care related fields. The minor brings together a background in fundamental science necessary to understand the biological basis of medicine with course work that explores health care both in classroom and clinical settings. The minor requires a minimum of 28 units, at least 16 of which must be at the upper-division level. If the core required courses listed below are already included in a student's major, then other lower division courses may be selected from the electives list.

Students should consult their advisers in selecting courses. Depending on the major, prerequisites may increase total units required to complete this minor.

REQUIRED COURSES (12 UNITS)		UNITS
BISC 220L	General Biology: Cell Biology and Physiology, or	4
BISC 221L	Advanced General Biology: Cell Biology and Physiology	
CHEM 103Lx	General Chemistry for the Environment and Life, or	4
CHEM 105aL	General Chemistry	
MDA 110	Contemporary Issues and Cases in Health Care	2
MEDS 220	Preparation for the Clinical Experience	2

Electives: Students must choose a minimum of 16 upper division units from the following lists.

Introduction to Human Health I

ANTH 101	Body, Mind and Healing	4
BISC 150Lx	The Nature of Human Health and Disease	4
PSYC 100	Introduction to Psychology	4
PSYC 360*	Abnormal Psychology	4

Introduction to Human Health II

BISC 320L*	Molecular Biology	4
BISC 421*	Neurobiology	4
BISC 450L*	Principles of Immunology	4
MEDS 260	Challenges in Biomedical Ethics	2
MEDS 300	Statistical Methods for Biomedical Research	4
PSYC 336L*	Developmental Psychology	4

The Biological Bases for Disease Processes

BISC 300L*	Introduction to Microbiology	4
BISC 307L*	General Physiology	4
BISC 330L*	Biochemistry	4
MEDS 310L*	Cells of Human Tissues and Organs: Medical Histology	4
EXSC 301L	Human Anatomy, or	
MEDS 320*	Clinical Perspectives on Human Anatomy	4
MEDS 330*	Introduction to Molecular Medicine	4
MEDS 340L*	Basic Human Neuroanatomy	4
MEDS 350*	Drugs and the Brain	4
MEDS 360*	Current Research Approaches to Biomedical Problems	4

Clinical and Biomedical Experience

BISC 423*	Epilepsy to Ecstasy: Biological Basis of Neurological Disorders	4
MEDS 430*	Introduction to Clinical Problem Solving	2
MEDS 440*	Introduction to Surgical Principles	3
MEDS 460*	Emergency Health Care	2
MEDS 465*	Wilderness and Survival Medicine	4
MEDS 490*	Directed Research in Biomedical Science	2-8

*Prerequisite required

Courses of Instruction**MEDICAL SCIENCES (MEDS)**

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

MEDS 220 Preparation for the Clinical Experience (2, FaSpSm) Discussion and exercises in clinically relevant topics (professional behavior, patient privacy, medical ethics, cultural competency, teamwork, etc.) in preparation for experience in the clinical setting.

MEDS 260 Challenges in the Forefront of Biomedical Ethics (2, Sp) Examination of fundamental ethical concepts and principles in clinical health care and biomedical research. Use of film, case studies and discussion. *Recommended preparation:* MDA 110 or MEDS 220.

MEDS 300 Statistical Methods for Biomedical Research (4, Fa) Fundamental basis for various statistical tests, underlying assumptions, and statistical analyses used in biomedical and clinical research.

MEDS 310L Cells of Human Tissues and Organs: Medical Histology (4, Fa) Lectures and laboratories examining the normal phenotype of human cells and tissues as a basis for understanding pathological processes that occur in disease. *Prerequisite:* BISC 220L or BISC 221L and CHEM 103 or CHEM 105a.

MEDS 320 Clinical Perspectives on Human Anatomy (4) Anatomical structure and function of the major regions of the human body as related to health and disease, using clinical cases, lectures and cadaveric demonstrations. *Prerequisite:* BISC 220L or BISC 221L.

MEDS 330 Introduction to Molecular Medicine (4) Molecular biological and genetic basis of common human diseases. Use of molecular medicine to provide strategy for understanding disease processes, diagnosis and treatment. *Prerequisite:* BISC 220L or BISC 221L; and BISC 320L or BISC 330L; and CHEM 103Lx or CHEM 105aL.

MEDS 340L Basic Human Neuroanatomy (4, Fa) Study of the human brain with emphasis on structure-functional relationships, illustrative case studies, current imaging techniques, with illustrative laboratory exercises using specimens and slides. *Prerequisite:* BISC 220L or BISC 221L; and CHEM 103Lx or CHEM 105aL; *recommended preparation:* MEDS 310.

MEDS 350 Drugs and the Brain (4) Effects of legal and illegal drugs on human brain function. Introduction to common prescribed drugs, pharmacokinetics, pharmacodynamics, and brain pathways utilized by common drug classes. *Prerequisite:* BISC 220L or BISC 221L; and CHEM 103Lx or CHEM 105aL; *recommended preparation:* BISC 320L or BISC 330L, MEDS 330.

MEDS 360 Current Research Approaches to Biomedical Problems (2, Fa) A theoretical basis of laboratory approaches that help the biomedical or physician scientist in understanding the etiology of disease and targeting disease processes. *Prerequisite:* BISC 220L or BISC 221L; and CHEM 103Lx or CHEM 105aL; *recommended preparation:* MEDS 330 and BISC 320L or BISC 330L.

MEDS 430 Introduction to Clinical Problem Solving (2, FaSpSm) One-on-one shadowing interactions with clinical mentor in regards to a specific clinical problem. Goal of understanding the underlying pathophysiology and epidemiology of the clinical problem. Open only to juniors and seniors. *Prerequisite:* BISC 220L or BISC 221L; and CHEM 103Lx or CHEM 105aL; and MEDS 220; and EXSC 301 or MEDS 320; *recommended preparation:* BISC 307L, BISC 320L or MEDS 330.

MEDS 440 Introduction to Surgical Principles (3, Sp) Introduction to the spectrum of surgical care, taught by surgeons, with the goal of developing an appreciation of the role that surgery plays in society. Open only to juniors and seniors. *Prerequisite:* BISC 220L or BISC 221L; and CHEM 103Lx or CHEM 105aL; and MEDS 220; and EXSC 301L or MEDS 320.

MEDS 460 Emergency Health Care (2, FaSpSm) Principles of emergency medical services, ranging from pre-hospital care and advanced life-saving, to minor injuries and illnesses. Interactive experience with ER physicians/emergency health care providers. *Prerequisite:* BISC 220L or BISC 221L; and MDA 110 or MEDS 220; and EXSC 301L or MEDS 320; *recommended preparation:* MEDS 260.

MEDS 465 Wilderness and Survival Medicine (4, FaSpSm) Medical physiology principles of people under "extreme" wilderness conditions, factors affecting remote medical care, and basic survival strategies, led by emergency medicine physicians. *Prerequisite:* BISC 220L or BISC 221L; and BISC 307; and MEDS 220; and MEDS 320.

MEDS 490x Directed Research in Biomedical Science (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit. *Prerequisite:* BISC 220L or BISC 221L, CHEM 103L or CHEM 105aL; *recommended preparation:* MEDS 300, MEDS 360.

Department-Specific Programs

Department of Anesthesiology

Nurse Anesthesia Program
1540 Alcazar Street
Suite 205
Los Angeles, CA 90089-9012
(323) 442-2037
FAX: (323) 442-1701
Email: uscnap@usc.edu
keck.usc.edu/nurse-anesthesia

Program Director: Michele E. Gold, Ph.D.
Associate Program Director: Teresa Norris, Ed.D.
Assistant Program Director of Clinical Services: Kären Embrey, Ed.D.

Faculty

Chair and Professor: Philip Lumb

Professor of Pediatrics and Anesthesiology: Randall Wetzel

Professors of Clinical Anesthesiology: Jack Berger; Mary Joseph; Ronald Katz; David Raphael; Duraiyah Thangathurai; Vladimir Zelman

Associate Professors of Clinical Anesthesiology: Jeffrey Lee; Rajesh Patel; David Raphael; Earl Strum

Assistant Professors of Clinical Anesthesiology: Rudolfo Amaya; Dimiter Arnaudov; Armin Azad; Maxim Benbassat; Martin Bohorquez; Kari Cole; James Daniel;

Gligor Gucev; Wayne Kaufman; Mariana Mogos; Ali Nemat; Candace Tay; Samuel Yanofsky

Instructors of Clinical Anesthesiology: Roberta Ashley; Deborah Avnet; Brindusa Bauer; Eric Bowles; James Carey; Jennilyn Casalmé; Carey Catania; Johnny Cheng; Nancy Christiano; Geoffrey Edwards; Judith Franco; Charlotte Garcia; Sarah Giron; Elizabeth Glazer; David Godden; Heather Hamza; Jessica Harris; Jennifer Hogan; Robert Horn; Dina Hunt; Monique Jabbour; Kim Jones-Tang; Rory Keenan; Cathy Kiem; Benjamin Lindsey; Victoria McKinzie; Arthur Norcliffe; Michelle Olivares; Margaret Oliveto; Robert Olsen; Patricia Paik; Nilu Patel; Erin Peters; Gabriel Punsalan; Christina Quinn; Ilene Richards; Sara Rondinone; Joseph Sammut; Helen Stepan; Crystal Trinooson; Rhona Wang; Kelly Zhou

The nurse anesthesia program prepares qualified nurses in the specialty of nurse anesthesia and qualifies the graduate to sit for the certification examination given by the National Board of Certification and Recertification for Nurse Anesthetists. The graduate attains a high level of clinical competence with an extensive body of didactic knowledge relevant to the specialty and advanced practice nursing. The mission of the USC Program of Nurse Anesthesia is scholarly education and professional development of future nurse anesthetists with the academic strength and leadership skills to advance our profession.

Students enrolling in the M.S., Nurse Anesthesia course of study must complete the nurse anesthesia core curriculum and specialty practicum. The program consists of 47 to 49 units and is completed in 27 months of continuous enrollment (seven semesters). Course work is based on academic criteria from the Council on Accreditation for nurse anesthesia programs. There is an optional one-semester clinical fellowship offered in the eighth semester of enrollment to provide specialty training in a clinical area of choice: critical care, cardiovascular, neurosurgical, ambulatory anesthesia or pain management. Students may sit for the certification examination during this semester.

The program is based in the Department of Anesthesiology, and classroom instruction is provided by nurse anesthesia program faculty and faculty from the Department of Anesthesiology, the Department of Physiology and Biophysics, and the Department of Cell and Neurobiology within the Keck School of Medicine, as well as clinical faculty from the program clinical sites. Primary clinical training occurs at Los Angeles County + USC Medical Center, Keck Hospital of USC, Harbor-UCLA Medical Center, Santa Monica-UCLA Medical Center, Long Beach Veterans' Administration Medical Center and West Los Angeles Veterans' Administration Medical Center. Advanced rotations occur at those sites, as well as Cedars-Sinai Medical Center, Children's Hospital of Los Angeles, Hallmark Pain Management and Surgery Center, and UCLA Medical Center.

Master of Science (in Nurse Anesthesia)

General requirements for admission include graduation from a regionally accredited school of nursing, a baccalaureate degree (minimum requirement), in nursing or a related field from a regionally accredited university or college, a minimum of one year critical care experience

(surgical, medical, neurosurgical, trauma, pediatric or neonatal acceptable; post anesthesia care unit and/or emergency department will be determined on an individual basis), a cumulative GPA of 3.0, or higher, on a scale of 4.0, Graduate Record Examinations scores with a minimum of 1000 on verbal and quantitative combined or the equivalent score of 300 on the GRE after September 2011 and a superior score on the analytic section, completion of university and program supplemental applications, current licensure as a registered nurse, submission of an essay describing the applicant's career goals, professional resume and three letters of reference.

Competitive applicants will be interviewed and must articulate an acceptable understanding of the role and responsibilities of certified registered nurse anesthetists. Selections are made on the basis of the formal interview and consideration of a variety of factors that include academic record, type and amount of clinical experience and professionalism.

Academic and Scientific Prerequisites

The admission requirements also include appropriate undergraduate course work in biology, anatomy, physiology, inorganic chemistry, organic chemistry, biochemistry, introductory physics, statistics or nursing research, health assessment and English comprehension. A minimum of one year of experience in critical care nursing as a registered nurse is required. Licensure as a registered nurse in California and current BLS, ACLS and PALS certifications are required prior to enrollment. Conversational Spanish is strongly recommended.

Computer Skill Requirements

During the program, students must have a personal computer or notebook with Internet access. The primary mode of program communication is email. Computer accounts are provided by the university to all students and can be activated online.

Advisement

Prospective students should contact the program's admission office, (323) 442-2037 or uscnap@usc.edu for evaluation of previous course work and clinical background.

Admission

Admission procedures follow the information in the USC Graduate School section of this catalogue. Admission standards for the USC nurse anesthesia program are established jointly by the Keck School of Medicine, the USC Graduate School and the Department of Anesthesiology. Interested students should apply online at usc.edu/admission/graduate/apply. Additional admissions requirements and the supplemental application must be obtained from the nurse anesthesia program and can be requested through email at uscnap@usc.edu or accessed at keck.usc.edu/nurse-anesthesia.

DEGREE REQUIREMENTS		UNITS
<i>Academic Courses</i>		
ANST 500	Human Anatomy	3
ANST 501	Advanced Pharmacology of Anesthesia Practice I	4
ANST 502	Principles of Nurse Anesthesia Practice	4

ANST 503	Advanced Pharmacology of Anesthesia Practice II	4
ANST 504	Advanced Physiology/Pathophysiology for Anesthetists	4
ANST 506	Advanced Principles of Nurse Anesthesia Practice	4
ANST 508	Research: Investigative Inquiry	3
ANST 510	Leadership and Professional Aspects of Nurse Anesthesia	3
ANST 512	Research Integration: Capstone Experience	2
ANST 607	Advanced Health Assessment	2
INTD 572	Systems Physiology and Disease I	4

Residency Courses

ANST 505	Clinical Residency in Nurse Anesthesia I	2
ANST 507	Clinical Residency in Nurse Anesthesia II	2
ANST 509	Advanced Clinical Residency in Nurse Anesthesia I	2
ANST 511	Advanced Clinical Residency in Nurse Anesthesia II	2
ANST 513	Advanced Clinical Residency in Nurse Anesthesia III	2
Total Units		47

Optional Course

ANST 514	Specialty Fellowship	2
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All students will take the Self-Evaluation Examination (SEE) administered by the National Board of Certification and Recertification for Nurse Anesthetists at the end of the first clinical year. Student scores must be above the national mean for advancement into the research capstone experience.

Courses of Instruction

ANESTHESIOLOGY (ANST)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

ANST 500 Human Anatomy (3, Fa) Lectures and laboratory simulation in anatomy emphasizing structure and function of major organs to include brain, cardiovascular, lungs, liver, kidneys and musculoskeletal system. Open to nurse anesthesia students only.

ANST 501 Advanced Pharmacology of Anesthesia Practice I (4, Fa) Pharmacokinetic and pharmacodynamic principles, uptake and distribution of inhalational anesthetics, and pharmacology of respiratory and cardiovascular drugs. Application of pharmacologic principles to anesthetic management.

ANST 502 Principles of Nurse Anesthesia Practice

(4, Fa) Basic theory of anesthesia administration, pre-anesthetic assessment, physical examination, monitoring. Case management including airway and blood/fluid management, anesthesia machine, and postoperative pain. Lecture/case study format. Open to nurse anesthesia students only.

ANST 503 Advanced Pharmacology of Anesthesia Practice II (4, FaSpSm)

Pharmacokinetic/pharmacodynamic principles of drugs covering different organs systems (cardiovascular, CNS, hematology, endocrine), herbal therapies, chemotherapeutics, antimicrobials. Application of pharmacology to anesthetic management using problem-based learning. *Prerequisite:* ANST 501 and ANST 502.

ANST 504 Advanced Physiology/Pathophysiology for Anesthetists (4, FaSpSm)

In-depth advanced study of cardiovascular, respiratory, renal, liver, endocrine and neurophysiology and pathophysiology with application of these principles to anesthetic case management across the lifespan. *Prerequisite:* ANST 501, ANST 502.

ANST 505 Clinical Residency in Nurse Anesthesia I (2, FaSpSm)

Correlation of techniques of anesthesia administration with application of scientific and pharmacologic theory in the clinical setting with observation and supervised clinical residency. Open only to nurse anesthesia majors. *Prerequisite:* ANST 501 and ANST 502.

ANST 506 Advanced Principles of Nurse Anesthesia Practice (4, Sm)

Advanced theory of anesthesia management for general and specialized procedures, diagnostic procedures, pediatrics and obstetrics. *Prerequisite:* ANST 503, ANST 504, ANST 505.

ANST 507 Clinical Residency in Nurse Anesthesia II (2, FaSpSm)

Correlation of techniques of anesthesia administration with application of scientific and pharmacologic theory in the clinical setting with observation and supervised clinical residency. Open only to nurse anesthesia majors. *Prerequisite:* ANST 505.

ANST 508 Research: Investigative Inquiry (3, FaSpSm)

Utilization of research, which includes the evaluation of research, problem identification within the practice setting, awareness of practice outcomes and the clinical application of research. *Recommended preparation:* research course; basic statistics.

ANST 509 Advanced Clinical Residency in Nurse Anesthesia I (2, FaSpSm)

Correlation of techniques of anesthesia administration with application of scientific and pharmacologic theory expanded to geriatric, obstetrical, and pediatric anesthesia; anesthetic management to include medically compromised patients. Open only to nurse anesthesia majors. *Prerequisite:* ANST 506, ANST 507.

ANST 510 Leadership and Professional Aspects of Nurse Anesthesia (3, FaSpSm)

Emphasis on leadership and the professional components of nurse anesthesia practice, including socialization, regulation, culture, ethics, law, employment, advocacy, and contemporary practice issues.

ANST 511 Advanced Clinical Residency in Nurse Anesthesia II (2, FaSpSm)

Correlation of techniques of anesthesia administration with application of scientific and pharmacologic theory expanded to neuroanesthesia, cardiac anesthesia, trauma anesthesia, critical care and pain management. Open only to nurse anesthesia majors.

ANST 512 Research Integration: Capstone Experience (2, FaSpSm)

A capstone course that requires student to demonstrate ability to integrate theory, research, and practice through a mentored research experience with direct relevance to graduate specialization. Open only to nurse anesthesia majors.

ANST 513 Advanced Clinical Residency in Nurse Anesthesia III (2, FaSpSm)

Correlation of advanced techniques of anesthesia administration with application of scientific and pharmacologic theory in diverse specialty anesthesia rotations. Open only to nurse anesthesia majors. *Prerequisite:* ANST 505, ANST 507, ANST 509, ANST 511.

ANST 514 Specialty Fellowship (2, Fa)

Optional internship to develop advanced skills and critical assessment of anesthesia specialty or clinical research. Graded CR/NC. *Prerequisite:* ANST 513; graduate of an accredited nurse anesthesia program.

ANST 590 Directed Research (1-12, FaSpSm)

Research leading to the master's degree in nurse anesthesia. Maximum units which may be applied to the degree to be determined by the department. Open to nurse anesthesia majors only. Graded CR/NC. *Prerequisite:* ANST 508.

ANST 591 Special Projects (1-4, max 4, FaSpSm)

Supervised learning in functional and/or clinical area of focus reflecting current trends and development in the field of nurse anesthesia. Open to nurse anesthesia majors only. Graded CR/NC.

ANST 607 Advanced Health Assessment (2, FaSpSm)

Advanced health assessment of all human systems utilizing advanced assessment techniques, concepts and approaches.

Department of Biochemistry and Molecular Biology

1333 San Pablo Street, MCA 51-A
Los Angeles, CA 90089-9151

(323) 442-1145

FAX: (323) 442-2494

Email: janet.stoeckert@usc.edu
usc.edu/medicine/biochemistry
usc.edu/pibbs

Faculty

Michael R. Stallcup, *Chair and Professor of Biochemistry and Molecular Biology*

Zoltan A. Tokes, *Vice Chair for Doctoral Education and Master of Science Program*

Joseph G. Hacia, *Vice Chair for Medical Education*

Catherine and Joseph Aresty Chair in Urologic Research: Chih-Lin Hsieh

Ralph Edgington Chair in Medicine: Zea Borok

Judy and Larry Freeman Chair in Basic Science Research: Amy S. Lee

H. Leslie Hoffman and Elaine S. Hoffman Chair in Cancer Research: Peter A. Jones

William M. Keck Chair in Biochemistry and Molecular Biology: Peggy Farnham

J. Harold and Edna L. LaBriola Chair in Genetic Orthopaedic Research: Baruch Frenkel

Rita and Edward Polusky Chair in Basic Cancer Research: Michael Lieber

Provost Professor of Medicine and Pharmacy: Michael Kahn

Professors: N. Arnheim (*Biological Sciences*); Z. Borok (*Medicine*); E. Cadenas (*Molecular Pharmacology and Toxicology*); P.V. Danenberg; Y.A. De Clerck (*Medicine*); R. Farley (*Physiology and Biophysics*); P. Farnham; B. Frenkel (*Orthopaedics*); C.L. Hsieh (*Urology*); D. Johnson; P.A. Jones (*Urology*); M. Kahn; V.K. Kalra; R. Langen; A.S. Lee; D. Levy; M. Lieber (*Pathology*); F.S. Markland, Jr.; R.E. Maxson; M.E. Nimni (*Pediatrics*); P. Patel; D. Polk (*Pediatrics*); P. Roy-Burman (*Pathology*); M.R. Stallcup; Z. Tokes; A. Warshel (*Chemistry*)

Associate Professors: W. An; P. Cannon (*Pediatrics*); I.S. Haworth (*Pharmacy*); J. Hacia; Y. Hong (*Surgery*); I. Laird-Offringa (*Surgery*); P. Laird (*Surgery*); R.D. Mosteller; S. Reddy; J. Rice; H. Sucov (*Cell and Neurobiology*); T. Ulmer

Assistant Professors: R. Bajpai (*Dentistry*); S. Curran (*Bio-Gerontology*); M. Frey (*Pediatrics*); A. Kobielski (*Otolaryngology*); C. Lien (*Pediatrics*); A. Merrill (*Dentistry*); W. Lu; A. Siemer

Assistant Professors of Research: T. Miki; S. Swenson; D. Weisenberger; S. Zhong

The USC Department of Biochemistry and Molecular Biology prides itself on maintaining a broad-based approach to various aspects of biochemical and molecular biological research. In 2010, the department received more than \$10 million in research funding for its primary faculty members.

Altogether, the department numbers 49 primary and joint-appointment faculty members, who

conduct research in a variety of areas including: molecular biology and genetics of development and cell differentiation; mammalian and human genetics; DNA methylation, replication, recombination and repair; membrane transport; kinetics and mechanism of enzyme action; protein structure-function interrelationships; carcinogenesis and cancer chemotherapy; and stem-cell biology.

The department also has major research programs in the molecular basis of control and regulation of gene expression, epigenetics, molecular mechanisms of signal processing and transduction, developmental and stem cell biology, detailed analysis of macromolecular structure and function, the biochemistry and molecular biology of the brain, and genetic medicine including gene therapy.

The department's exceptionally strong research into various aspects of the biochemistry and cell biology of cancer is internationally recognized. Ongoing research programs in this area include mechanism of action of cancer chemotherapeutic agents, tumor cell invasion and metastasis, and cancer cell epigenetics and gene regulation.

Many members of the department are members of the USC Norris Comprehensive Cancer Center, USC Institute for Genetic Medicine (IGM), USC Zilkha Neurogenetic Institute (ZNI), Eli and Edythe Broad CIRM Center for Regenerative Medicine and Stem Cell Research at USC, and Children's Hospital Los Angeles (CHLA).

The USC Norris Comprehensive Cancer Center maintains a microchemical core facility that includes capabilities for gas phase protein sequencing, amino acid analysis, peptide synthesis, DNA synthesis and sequencing. The Institute for Genetic Medicine maintains a customized microarray core facility. Other facilities available to support the research of members of the department include mass spectroscopy, transgenic mice, flow-cytometry, biostatistics, microchemical resource for DNA, and protein sequencing and synthesis core facilities.

The primary offices and laboratories of the department are located on the Health Sciences Campus.

Graduate Programs

Admissions

The prerequisite for applicants to the graduate program in biochemistry and molecular biology is a bachelor's degree with an undergraduate major in one of the natural sciences. Undergraduate course work should have included organic chemistry, the physics and mathematics required of a chemistry major and some courses in the biological sciences. A course in general biochemistry is also required, but may be taken during the period of graduate study. Previous course work in physical chemistry is strongly recommended. A minimum GPA of 3.0 in the natural sciences (including mathematics) is normally required.

Applicants must pass satisfactorily the general portions of the Graduate Record Examinations. In addition, the department requires at least three letters of recommendation from faculty members who can evaluate the applicant's potential for graduate work and independent research.

Faculty members of the Department of Biochemistry and Molecular Biology participate in a variety of interdisciplinary Ph.D. programs. Students interested

in pursuing a Ph.D. degree in the fields related to biochemistry, molecular and cellular biology, and genetics should apply to USC's Programs in Biomedical and Biological Sciences (PIBBS). Applications for the Ph.D. Programs in Biomedical and Biological Sciences should be submitted online through the PIBBS Website (usc.edu/pibbs).

Applications should be submitted before the application due date specified on the PIBBS Website. Applications for the M.S. program in biochemistry and molecular biology can be obtained from the department at the address listed below. In addition to the university application, a supplemental departmental application must be completed and returned with transcripts, GRE scores and letters of recommendation to: Graduate Admissions Committee, Department of Biochemistry and Molecular Biology, 1333 San Pablo Street, Los Angeles, CA 90089-9151.

Fellowships

Students admitted to PIBBS are awarded fellowships which pay for tuition and provide a stipend. No fellowships are available for master's degree students.

Master of Science

The Department of Biochemistry and Molecular Biology offers a program for the Master of Science degree. The primary objectives of this program are to provide the necessary theoretical preparation for biochemical careers and to expose students to biochemistry and molecular biology related research activities culminating with the Master of Science degree. Goals of the program are to train students in preparation for (1) further doctoral study, (2) advanced biochemical research positions in industry and academia and (3) teaching positions at the community college level.

In general, admission requirements are the same as for the Doctor of Philosophy degree. The prerequisite for applicants to the graduate program in biochemistry is a bachelor's degree with an undergraduate major in one of the natural sciences. A minimum GPA of 3.0 in the natural sciences (including mathematics) is normally required. Applicants must satisfactorily pass the general and advanced (chemistry, or biology or molecular biology) portions of the Graduate Record Examinations. In addition, the department requires at least three letters of recommendation from faculty members who can evaluate the applicant's potential for graduate work and independent research. Demonstrated proficiency in the English language is required. Special circumstances may provide consideration for conditional admission.

The master's degree in biochemistry and molecular biology requires 34 units of elective graduate study to be determined by the student's advisory committee. Fourteen or more course units must be taken in biochemistry and molecular biology; eight units may be pursued outside the department. Students interested in the commercial aspects of biotechnology may take courses focusing on business entrepreneurship, finance, management and marketing in the USC Marshall School of Business. Master's students have the option of completing a research thesis allowing state-of-the-art laboratory-based investigation or a non-research-based theoretical thesis. Upon approval, a maximum of 10 units of directed research in biochemistry will be applied to the degree. Up to six units of graduate

course work taken outside of USC may be applied toward the M.S. degree. Flexibility exists to plan each student's program to suit individual needs, ambitions and background.

Master of Science, Molecular Epidemiology

A joint program with the Department of Preventive Medicine offers an M.S. degree in Molecular Epidemiology that requires 37 units of graduate study (see page 782xx for course requirements). Students must also complete a master's thesis. Students can register for up to 10 units of master's research units. Interested students should contact the Department of Preventive Medicine.

Ph.D. in Genetic, Molecular and Cellular Biology (GMCB) or Ph.D. in Integrative Biology of Disease (IBD)

Faculty members in the Department of Biochemistry and Molecular Biology participate in the GMCB and IBD Ph.D. programs. For admission information and degree requirements, see GMCB (page 763xx) and IBD (page 764xx).

Doctor of Philosophy

The Department of Biochemistry and Molecular Biology offers graduate degree courses directed toward the Ph.D. degree in this discipline. The objective of this program is to prepare students for careers as independent investigators and instructors in biochemistry, molecular biology and related fields.

The program consists of both course work and research and is intended to provide students with a broad conceptual background as well as focused research training. The flexibility of the program is designed to meet the interests of individual students and to prepare them for specialization in any of the major subdivisions of biochemistry.

Course Requirements A total of 60 units of graduate credits is required for the Ph.D., including course work, research and dissertation units. At least 24 of these units must be from courses numbered 500 or higher; at least 12 of these units must be taken in biochemistry, while the remaining 12 units may be taken in various related disciplines. Students are expected to take the three seminar courses and additional courses may be required by the Graduate Advisory Committee or by the student's qualifying exam committee. Students must complete all courses with a cumulative GPA of not less than 3.0 and must maintain this average in order to remain in the graduate program. Students are expected to spend full time during the academic year and summer on course work or research.

Screening Procedure The department's Graduate Advisory Committee, consisting of four faculty members, assesses the educational objectives and research interests of each student admitted to the graduate program. The committee then recommends a program of graduate courses and research suited to the individual student. The advisory committee evaluates the student's performance throughout the first year and must approve the student's progress prior to his or her selection of a research adviser.

Qualifying Exam Committee To assist students in selecting their research advisers, doctoral students rotate

through four research laboratories during their first year in the graduate program. By the first summer of graduate study, each student is expected to have selected a research adviser. Shortly afterward the student should form a five-member qualifying exam committee. Members of the committee must include the student's research adviser, at least three faculty members from the Department of Biochemistry and Molecular Biology and at least one member from outside the department.

Qualifying Examination Students in the Ph.D. program must pass both the written and oral portions of a comprehensive qualifying examination on the major areas of biochemistry. The written portion consists of a comprehensive examination given annually, which must be passed before the oral portion can be taken. The oral portion must be scheduled within three months of the successful completion of the written examination. The proposition will be focused on the student's dissertation research and is intended to test the student's depth and breadth of knowledge in his or her area of research. The student will be asked to prepare a short summary of the dissertation research proposal and submit it within two weeks of the oral defense. The oral examination consists of a defense of both propositions and can include questions dealing with the written examination and other areas of biochemistry. The oral examination will give applicants the opportunity to unravel complex problems and will also test their overall knowledge of biochemistry and molecular biology.

Recommendations for advancement to candidacy for the Ph.D. degree are made on the basis of the successful completion of these requirements and the student's maintenance of at least a 3.0 GPA. A student who has not been recommended for advancement to candidacy at the end of three years will be terminated unless given permission to write a master's thesis and terminate graduate work with an M.S. degree.

Dissertation and Oral Defense The student's dissertation committee consists of the research adviser, one other member from the department and one member from outside the department. The dissertation must represent an original contribution to biochemistry and should indicate the ability of the student to undertake independent investigation. The defense of the dissertation includes the presentation of a seminar that is open to the public.

Ph.D. in Molecular Epidemiology

Faculty members in the Department of Biochemistry and Molecular Biology participate in the Molecular Epidemiology Ph.D. program. For admission information and degree requirements, see the Department of Preventive Medicine, page 795xx.

Courses of Instruction

BIOCHEMISTRY (BIOC)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

BIOC 501 Recent Advances in Biochemistry (2-4, max 16, Fa) Lectures on areas of intermediary metabolism and the chemistry of natural products. *Prerequisite*: BISC 435, CHEM 430ab.

BIOC 502 Biochemistry Seminar (1, max 12, FaSp) Formal presentations and discussion by students of material from research literature.

BIOC 504 Molecular Biology of Cancer (4, Sp) (Enroll in INTD 504)

BIOC 510 Introductory Molecular Biology (2, Sp) Principles of molecular biology with applications to the medical sciences. Nucleic acid structure, function, and analysis. *Recommended preparation*: a course in biochemistry.

BIOC 512 Molecular Basis of Cell Proliferation and Differentiation (2, Irregular) An advanced seminar course in molecular cell biology, discussing current literature with significant impact on the understanding of the cell cycle and differentiation of various cell types. *Recommended preparation*: basic cell biology and molecular biology. (Frenkel)

BIOC 522 Applications of Physical Methods in Biochemistry (2, FaSp) Applications of physical analytical methods commonly utilized in research in biochemistry and molecular biology. *Concurrent enrollment*: CHEM 521. (Langen)

BIOC 531 Cell Biology (4) (Enroll in INTD 531)

BIOC 536 Molecular Biology of Cellular Communication in the Nervous System (2, Sp) Discussion of cellular communications in the nervous system through neurotransmitters and their receptors, neuromodulators; biochemical changes during development and the impact of human genomic research. *Recommended preparation*: one year of general biochemistry or molecular biology. (Tokes)

BIOC 542 Cellular and Molecular Basis of Animal Development (4, Fa) Processes of cell type specification, determination, and morphogenesis in metazoans from vertebrates to insects. Genetic, paragenetic and molecular biological approaches to developmental processes. *Prerequisite*: INTD 571. (Maxson)

BIOC 543 Human Molecular Genetics (4, Fa) Comprehensive course covering basic principles of human genetics, genetic disease, the Human Genome Project, and gene therapy. *Recommended preparation*: undergraduate genetics. (Allayee)

BIOC 551 Prokaryotic Molecular Genetics (4, Fa) (Enroll in MICB 551)

BIOC 555 Biochemical and Molecular Bases of Disease (4) (Enroll in INTD 555)

BIOC 561 Molecular Genetics (4, Sp) (Enroll in INTD 561)

BIOC 571 Biochemistry (4, Fa) (Enroll in INTD 571)

BIOC 573 Optimal Research Presentations by Ph.D. Students (1, max 12, FaSp) Students will attend lectures by peers, and after their first year in the Ph.D. program, prepare and present their own research to an audience of faculty and peers. Open to Ph.D. students in Genetic, Molecular and Cellular Biology Program (GMCB), Biochemistry and Molecular Biology and Molecular Epidemiology only. Graded CR/NC. (Hong)

BIOC 574 Systems Physiology and Disease II (4, Sp) (Enroll in INTD 573)

BIOC 590 Directed Research (1-10, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

BIOC 594abz Master's Thesis (2-2-0, FaSpSm) Credit on acceptance of thesis. Graded IP/CR/NC.

BIOC 599 Special Topics (2-4, max 8)

BIOC 601 Molecular Biology of Gene Regulation (2, max 8, FaSp) Current techniques and systems in molecular biology from an interdisciplinary perspective: microbiological, biochemical, and pharmaceutical.

BIOC 604 Current Topics in Animal Development (2, Sp) (Enroll in CNB 604)

BIOC 790 Research (1-12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

BIOC 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC.

Department of Cell and Neurobiology

McKibben Hall 51A
1333 San Pablo Street
Los Angeles, CA 90089-9151
(323) 442-1145
FAX: (323) 442-2411
Email: janet.stoeckert@usc.edu

Faculty

Professor and Chair: Mikel H. Snow

W.M. Keck Provost Professor of Neurogenetics, Neuroscience, Psychiatry, Psychology and Pharmacy: Pat Levitt, Ph.D.

Professors: J. Chen; M. E. Fini; P. Levitt; A. McDonough; T.H. McNeill*; J.E. Schechter*; M. Snow; R. I. Wood*; S.Y. Ying

Associate Professors: G.H. Albrecht*; K. Eagleson; J.A. Garner*; R. Gopalakrishna*; J.D. Miller; P. Elyse Schauwecker; H. Sucov*; Q-L Ying

Assistant Professors: G. Adams; A. Bonnin; K. Chang; G. Crump; G. Field; M. Habib; F. Mariani; B. Patel; H. Tao; M. Winfield; H. Wu

Emeritus Professor: Dwight Warren III

**Recipient of university-wide or school teaching award.*

The Department of Cell and Neurobiology provides interdisciplinary training in molecular, cellular and systems biology. Ongoing programs explore basic mechanisms in molecular and cellular neurobiology, neurogenetics, endocrinology, pharmacology, stem cell biology and vertebrate evolution. Disease-oriented research, bridging basic and clinical disciplines, investigates inherited or acquired disorders in vision, stroke, Parkinson's disease, Alzheimer's disease, epilepsy and steroid abuse. The challenge is to weld interdisciplinary activities into a conduit for transferring basic science discoveries into more effective and innovative clinical interventions in the treatment of disease-related disabilities.

The Department of Cell and Neurobiology has 24 primary faculty members.

The graduate program of the Department of Cell and Neurobiology is dedicated to excellence and state-of-the-art training and education in molecular and cellular aspects of normal function and in acquired or genetic disorders that cause human disease. Professional and intellectual development is fostered through a broadly based curriculum from which students can tailor a menu of specialization and by a supportive environment of faculty interactions. Graduate education is designed to prepare the student for a lifetime of learning, exploring the limits of research, teaching and creative activities.

Cell and Neurobiology Graduate Program

The graduate program offered in cell and neurobiology provides a flexible, individualized course of study directed toward developing independent, resourceful scholars. The major thrust of this program is devoted to students training for the Ph.D. degree but study toward the M.S. degree is also possible.

Admissions

Master of Science The prerequisite for applicants to the M.S. graduate program in cell and neurobiology is a bachelor's degree with a science major or equivalent. Applicants should have a superior undergraduate record at an accredited college or university. Additional requirements include three letters of recommendation and satisfactory performance on the general and advanced (biology or chemistry) portions of the Graduate Record Examinations. Students are normally admitted for the academic year beginning in the fall; however admission to the master's program can begin in the spring semester with approval from the Graduate Admission Committee. Application deadline for the following academic year is January 1.

Doctor of Philosophy Doctoral candidates interested in working with CNB faculty in the areas of neural, computational, cognitive and behavioral science should apply through either of the two university wide interdisciplinary graduate programs at USC: the Neuroscience Graduate Program or the Program in Biomedical and Biological Science (PIBBS). Applicants interested

in working with CNB faculty as part of the M.D./Ph.D. program should apply directly to the Keck School of Medicine.

Application deadlines:

- M.D./Ph.D. program — American Medical College Application Service (AMCAS) — November 1; Supplemental — December 1
- Neuroscience Graduate Program — January 15 (see Graduate School, page 97xx, for Ph.D. student funding deadline information)
- PIBBS — December 15

Master of Science

The Master of Science degree is awarded for demonstrated competence in the cell biological sciences, broadly defined. Two options are available: (1) a non-thesis M.S. program based entirely on course work followed by a comprehensive examination; and (2) a thesis M.S. program that includes fewer courses but requires a written thesis based on original laboratory research. Students take courses both from the Department of Cell and Neurobiology and other departments to obtain a broad appreciation of structure and function. Students must maintain a minimum GPA of 3.0. The Master of Science candidate may engage in teaching if this is beneficial to the individual program.

Students in the non-thesis program must complete a minimum of 34 units of graduate level courses (500 or higher) beyond the baccalaureate degree.

Non-thesis students must take 16 units from the following list of courses: BISC 421, BME 552, BME 575L, BME 670, BME 671, CNB 501ab, CNB 511abL, CNB 512L, CNB 513, CNB 521, CNB 525, CNB 534, CNB 631, INTD 504, INTD 531, INTD 555, INTD 561, INTD 571, INTD 572, INTD 573, MICB 551, NEUR 524. All students must pass additional courses totaling 18 units. All course work must be approved by the student's graduate adviser and the chair of the graduate program.

Students in the thesis program must complete a minimum of 38 units of graduate level courses (500 or higher) beyond the baccalaureate degree.

The regulations for thesis students are the same as specified above, except the student is required to take only 12 units from the course list and an additional 16 units from other departmental or non-departmental courses. Students will also take 6 units of CNB 590. The thesis M.S. student is required to take at least 4 units of Master's Thesis (CNB 594). All course work must be approved by the student's graduate adviser and the chair of the graduate program.

Doctor of Philosophy

The Ph.D. student develops background knowledge in cellular, molecular and structural biological sciences. The objective of the Ph.D. program is rigorous, original research experience obtained by design and execution of a dissertation project. Active research areas for which guidance is available include cell and molecular biology, neurobiology of circadian rhythms, visual neuroscience, neuropharmacology, neurodegenerative and neurogenetic diseases, developmental and cellular neuroscience, neuroendocrinology, reproductive endocrinology and evolutionary biology.

Research Tool-Statistics

Each student must demonstrate competence in statistics. The student must demonstrate competence in the theory and use of statistics including knowledge of regression, correlation and analysis of variance. A student who has prior experience in statistics should consult the faculty adviser and petition the Graduate Advisory Committee to waive the research tool requirement. This requirement may be fulfilled by obtaining a grade of B (3.0) or higher in specified courses. This requirement must be fulfilled before the qualifying examination.

Course Requirements

A minimum of 60 units of course credit is required for the Ph.D. Course requirements vary according to the specific needs of the student. Graduate students must take at least 16 units from the following list of courses: BISC 421, BME 552, BME 575L, BME 670, BME 671, CNB 501ab, CNB 511abL, CNB 512L, CNB 521, CNB 525, CNB 534, CNB 631, INTD 504, INTD 531, INTD 555, INTD 561, INTD 571, INTD 572, INTD 573, MICB 551, NEUR 524. Ph.D. students must take additional classes or research units totaling 44 units from other departmental or non-departmental courses. All course work must be approved by the student's graduate adviser and the chair of the graduate program.

Prior to the qualifying examination, each student must complete at least three, eight-week periods of introductory research in the laboratories of departmental faculty. The purpose of the laboratory rotations is to encourage one-on-one interactions between new students and departmental faculty while at the same time providing an introduction to research in a sampling of departmental laboratories.

Course work outside of the departmental offerings is often encouraged and may be required by the student's qualifying exam committee. In most instances, a program will include extra departmental courses such as physiology, biochemistry and molecular biology. A grade point average of at least 3.0 (A = 4.0) must be maintained in both departmental and overall course work.

Communication Skills Requirement

The department considers teaching experience to be an important part of graduate education. Students in the Ph.D. program are required to serve a teaching practicum during at least one semester of their graduate training.

Screening Procedure

The graduate affairs committee conducts a screening for each student at the end of one full year in the program. The committee reviews thoroughly all facets of the student's performance in the graduate program. The student's progress must be judged satisfactory before a qualifying exam committee can be nominated.

Qualifying Exam Committee

Students are expected to select a general area of research interest and a dissertation adviser as soon as possible but no later than 18 months after entering the graduate program in this department. The dissertation adviser and the graduate affairs committee consult with the student to select a qualifying exam committee. After the student has successfully completed the first-year

screening, the qualifying exam committee's nomination is forwarded to the Graduate School.

Qualifying Examination

Before the end of their fifth semester of graduate standing, students in the Ph.D. program must pass both the written and oral portions of a qualifying examination. The examination is intended to reveal the student's insight and understanding of general concepts and the ability to design and defend a dissertation research project. The examination is designed and administered by the student's qualifying exam committee.

Dissertation and Oral Defense

After the student has passed the qualifying examination, a dissertation committee (commonly comprising the former qualifying exam committee) is appointed to advise the student regarding the research project and to supervise writing of the dissertation. The dissertation must be an original contribution giving evidence of the student's ability to perform independent and innovative research. The final oral defense shall be open to the public and the dissertation adviser will entertain questions from the dissertation committee and assembled audience.

Courses of Instruction

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

CELL AND NEUROBIOLOGY (CNB)

CNB 501ab Gross Human Anatomy (3-4, FaSp) A complete dissection of the adult human body. Supplementary lectures and demonstrations. Emphasis on correlating development, structure and function.

CNB 511abL Microscopic Anatomy (3-3, FaSp) Lectures and laboratory in microscopic anatomy emphasizing embryonic origin of the basic body plan, cells, tissues, and organs; ultrastructural and functional correlations.

CNB 512L Pharmacology I (5, Fa) Actions, chemical properties, bodily distribution, and toxicology of drugs. Laboratory. (Duplicates credit in former PHNU 510L.)

CNB 513 Pharmacology II (3, Sp) Continuation of 512L. (Duplicates credit in former PHNU 511.) *Prerequisite:* CNB 512L.

CNB 521 Neuroanatomy (3, Sp) Structure and function of the human nervous system with emphasis on central conduction pathways, especially those of clinical significance.

CNB 525 Neural Development (3, Fa) Cellular, molecular, and physiological features of development and plasticity in the nervous system. Lecture and student presentations and discussion of classic and current research literature. *Prerequisite:* BISC 524; *recommended preparation:* background in neurosciences.

CNB 530 Anatomy for the Artist (1-2, Irregular) This course includes lectures and demonstrations of human anatomy specifically for the artist, and art instruction on drawing the human figure.

CNB 531 Cell Biology (4, Fa) (Enroll in INTD 531)

CNB 534 Molecular Aspects of Neuropharmacology (2, FaSp) Current advances in selected areas of molecular neuropharmacology, e.g., mechanisms by which drugs affect neurotransmitter systems, neural plasticity, treatment of neurological and psychiatric diseases.

CNB 550 Cell and Neurobiology Seminar (1, max 6, FaSp) Reports and discussion on recent advances in anatomy. Graded CR/NC. (Duplicates credit in former ANCB 550.)

CNB 561 Molecular Genetics (4, Sp) (Enroll in INTD 561)

CNB 571 Biochemistry (4, Fa) (Enroll in INTD 571)

CNB 572 Systems Physiology and Disease I (4, Fa) (Enroll in INTD 572)

CNB 573 Systems Physiology and Disease II (4, Sp) (Enroll in INTD 573)

CNB 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

CNB 594abz Master's Thesis (2-2-0, FaSpSm) Credit on acceptance of thesis. Graded IP/CR/NC.

CNB 598 Introductory Laboratory Rotations (1-3, FaSp) Introductory laboratory rotations wherein students are directed in individualized research, reading and discussion to provide perspective and supplemental background in areas of faculty research interests.

CNB 599 Special Topics (2-4, max 8, FaSp) Special topics provides background for instruction and research in the Department of Cell and Neurobiology through lectures, discussions, assigned readings, and student presentations. (Duplicates credit in former ANCB 599 and PHNU 599.)

CNB 600 Literature Tutorial (1, max 3, FaSp) Individualized readings and discussions culminating in a literature-review paper; to promote the acquisition of critical thinking skills in the evaluation of scientific problems. *Recommended preparation:* background in biological sciences.

CNB 603 Current Topics in Vision Research (2, Sp) Basic science (e.g., anatomy, cell biology, electrophysiology) and clinical aspects of the eye: cornea, lens, retina, and optic nerve. USC faculty and authorities from other institutions will lecture.

CNB 604 Current Topics in Animal Development (2, 2 years, Sp) Current research in selected aspects of mammalian and nonmammalian developmental biology, including the molecular genetics and molecular biology of organogenesis, morphogenesis, lineage specification, and differentiation. *Prerequisite:* INTD 561 and CNB 542.

CNB 631 Morphogenesis and Regeneration (2, 2 years, Sp) Analysis of developing and regenerating systems: historical and recent interpretations of morphogenetic movements, tissue interactions, fields, gradients, differentiation, and determination.

CNB 641 Brain-Endocrine Interactions in Reproduction (2, 2 years, Fa) Past and current experimental approaches to morphology and endocrinology at hypothalamic, pituitary, and gonadal levels in both males and females. *Prerequisite:* CNB 511abL or a general endocrinology course.

CNB 790 Research (1-12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

CNB 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC.

Department of Family Medicine

Division of Physician Assistant Studies Primary Care Physician Assistant Program

1000 South Fremont Avenue
Unit 7, Building A11, Room 11-150
Alhambra, CA 91803
(626) 457-4240
FAX: (626) 457-4245
Email: uscpcpa@usc.edu
usc.edu/pa

Program Director: Kevin Lohenry, Ph.D., PA-C
Medical Directors: Ignacio DeArtola, M.D.; Raymond Waliany, M.D.

Faculty

Professor of Clinical Family Medicine: D. Lie

Assistant Professors of Clinical Family Medicine:
I. DeArtola; M. Durham; C. Forest; L. Landry-Taylor;
K. Lohenry; J. Mabec; R. Waliany

Instructors of Clinical Family Medicine: L. Kirakosian;
M. Maldonado; D. Mayo; A. Schultz; J. Tramel;
A. Walsh; J. Wegler

The faculty listed above are faculty with the Primary Care Physician Assistant Program.

The Primary Care Physician Assistant Program prepares students to practice medicine under the supervision of a physician. Students earn a Master of Physician Assistant Practice (MPAP) degree upon completion of the program.

The MPAP degree program offered by the Division of Physician Assistant Studies is part of the Department of Family Medicine. Preclinical instruction is provided by

physician assistant program faculty and faculty from other departments within the Keck School of Medicine, the USC School of Pharmacy, other divisions within the Health Sciences Campus, as well as clinicians from the surrounding communities. Emphasis is placed on primary care medicine and caring for medically underserved populations. Clinical training occurs at various clinical sites throughout the greater Los Angeles region, including the Los Angeles County+USC Medical Center, Arrowhead Regional Medical Center, Long Beach Memorial Family Practice Residency, private offices and managed-care settings, community-based clinics, VA facilities and specialty settings. Opportunities to train in selected off-site settings serving Native American populations in the Southwest are also available to students upon approval.

Students complete eight, six-week clinical clerkships in emergency medicine, family medicine, internal medicine/geriatrics, orthopedics/occupational medicine, pediatrics, general surgery and women's health. These clerkships emphasize the development of necessary clinical skills as well as learning how to work as part of a health care team. The Primary Care Physician Assistant Program is committed to recruiting diverse applicants and preparing graduates to practice in medically underserved communities.

The USC Primary Care Physician Assistant Program is accredited by the Accreditation Review Committee on Education for the Physician Assistant (ARC-PA), which is sponsored by seven national medical associations including the American Medical Association. The program is approved by the Physician Assistant Committee (PAC) of the Medical Board of California. Graduates must pass the National Commission on Certification of Physician Assistants (NCCPA) Physician Assistant National Certifying Exam to qualify for licensure throughout the United States.

Master of Physician Assistant Practice Admission Requirements and Procedures

Application to the Physician Assistant Program requires completion of a bachelor's degree (in any discipline) from a regionally accredited four-year institution and completion of academic prerequisite requirements.

Admission to the program is for the fall semester only. Admission is granted by the physician assistant admissions committee after careful review of all applications. Selections are made on the basis of a formal interview (for competitive applicants) and consideration of a variety of factors which include: academic record, type and amount of clinical experience, multicultural sensitivity, community service experience and professional experience.

Applicants are required to submit an application through the Central Application Service for Physician Assistants (CASPA) as well as a USC Supplemental Application by November 1 of each year (beginning 2013). Further details regarding admission procedures including those for international student applicants are provided online at usc.edu/pa.

Transfer Students or Advanced Placement

The Physician Assistant Program does not accept transfer students, nor do we allow advanced placement based on prior education or clinical experience. Each applicant who is admitted is required to complete the

full Master of Physician Assistant Practice curriculum in residence at USC. No waivers or substitutions are permitted.

Registration

Students receive information regarding registration procedures during an orientation program held the week before classes begin.

Advisement

Information sessions are available for prospective students who would like to receive more information regarding the program. Applicants are encouraged to attend one of the program's information sessions where PA faculty and staff describe the program, the application process and answer general questions. Information sessions are held on the Alhambra Campus, Building A11. Contact the PA Program for further details and RSVP at uscpa@usc.edu or call (626) 457-4240. The information session schedule may be viewed at usc.edu/pa.

Degree Prerequisites

A bachelor's degree from a regionally accredited institution and completion of all prerequisite course work are required for admission to the Physician Assistant Program.

Science Prerequisites

A one-year general biology sequence with lab and a one-year general chemistry sequence with lab, each course designed for science majors. All science prerequisites must be completed within 10 years of application to the program.

Three semester units or 4 quarter units of each of the following: human anatomy with lab; human physiology with lab; and microbiology with lab.

Distance learning courses are acceptable provided they are equivalent in all dimensions (including laboratory requirements) to courses taught in "traditional" educational settings (e.g., hybrid courses). All distance learning course credit must be provided by regionally accredited institutions of higher education.

Online science courses are not eligible for consideration as a prerequisite.

Students are expected to have a strong competency in medical terminology.

All science prerequisites should be completed within 10 years of application to the program. Exceptions to the 10-year science prerequisite time frame may be granted on an individual basis to those individuals who have completed one of the following: 1) at least 8 semester units of graduate credit in a medically related natural science discipline with an overall grade point average of 3.0 or better, completed within seven years of the application deadline, or 2) received an advanced degree in the natural or clinical sciences (e.g., M.S., DVM, Pharm.D., Ph.D., M.D.) within 10 years of the application deadline. In either case, all course work completed and degrees conferred must be from institutions of higher education accredited by an accrediting agency recognized by the Secretary of the U.S. Department of Education. Requests for this 10-year exemption should be directed to the chair of Admissions.

Non-science Prerequisites

Three semester units or 4 quarter units of each of the following: general psychology and statistics.

Two semesters of beginning Spanish language.

Students who intend to apply to the Physician Assistant Program should contact the admission office for evaluation of previous baccalaureate and/or post-baccalaureate course work.

Standardized Tests

Applicants are required to take either the GRE or MCAT examination. The examination must be taken within five years of the application deadline of November 1. Official scores of the general and analytical sections of the GRE must be submitted to USC by using the Institutional Code 4852 (departmental code is not necessary). Applicants with MCAT scores must provide their AAMC verification code to the USC PA Program. GRE or MCAT scores must be submitted by November 1. The PA Program expects that all applicants earn a combined quantitative and verbal GRE score of no less than 1,000 (on the older version of the exam) and 295 (on the newer version of the exam).

Clinical Experience Prerequisite

"Hands-on" patient care experience is preferred. Most successful applicants typically have 2,000 hours or more of paid clinical hours and have worked as one of the following: emergency medical technician, licensed vocational nurse, medical assistant, medical scribe, medical technologist, military medical corpsman, paramedic, psychiatric technician, physical therapy aide, radiological technician, respiratory therapist or registered nurse. Other health care experience is equally acceptable as long as the experience is "hands-on" in nature.

Physician Assistant Shadowing Experience

Shadowing a physician assistant in a clinical setting is expected. This activity provides the applicant with the up-close experience needed to understand the role and responsibilities of the PA and may help the applicant make a better informed decision in choosing a career as a physician assistant.

Community Service Prerequisite

Community service activities/projects are expected of all applicants. Service which benefits medically underserved or disadvantaged populations is preferred.

Curriculum Requirements

The completion of the 33-month professional curriculum is required to earn the Master of Physician Assistant Practice degree. Students do not have choices of courses to take nor are they permitted to drop any course or courses during the semester. Progress is permitted only when the prior semester is successfully completed. Students should view the curriculum outlined here as advisory only and subject to modification.

Summative Evaluation

A summative evaluation is conducted on each student during the sixth and final semester of the program to verify that each student is prepared to enter clinical practice.

Health Requirements and Technical Standards

All accepted candidates are required to meet the PA program's technical standards (physical and psychological competencies of performance) prior to entering the program and throughout training. Upon acceptance, students will be required to submit and maintain evidence of current health status and immunizations. Specific details outlining these technical standards are located at usc.edu/pa.

Background Check

All USC Physician Assistant students are required to pass a background check upon admission to the Master of Physician Assistant Practice (MPAP) Program.

Degree Requirements

All students in the Master of Physician Assistant Practice degree program must meet course and grade point average requirements. All course requirements must be completed with a grade of "B" or better. The degree will not be conferred until the student has successfully completed all degree requirements. Students are subject to the degree requirements in the catalogue current for the semester of their admission into the program.

Physician assistant students are enrolled in a standard curriculum during their 33 months in the program. The following courses must be successfully completed in order to earn the Master of Physician Assistant Practice degree. Only physician assistant students may enroll in these courses. Departmental clearance is required to enroll.

YEAR I, FALL SEMESTER		UNITS
PCPA 503	Behavioral Sciences I	4
PCPA 523	Clinical Skills I	4
PCPA 530	Basic Medical Sciences	6
PCPA 543	Topics in Medicine I	4
		18

YEAR I, SPRING SEMESTER		UNITS
PCPA 506	Behavioral Sciences II	4
PCPA 526	Clinical Skills II	6
PCPA 546	Topics in Medicine II	6
		16

YEAR II, FALL SEMESTER		UNITS
PCPA 509	Behavioral Sciences III	4
PCPA 529	Clinical Skills III	6
PCPA 549	Topics in Medicine III	6
		16

YEAR II, SPRING SEMESTER		UNITS
PCPA 561	Clinical Assignment I	3.5
PCPA 562	Clinical Assignment II	3.5
PCPA 564a	Clinical Assignment IV	3.5
PCPA 565a	Clinical Assignment V	3.5
		14

YEAR II, SUMMER SESSION		UNITS
PCPA 564b	Clinical Assignment IV	0
PCPA 565b	Clinical Assignment V	0

YEAR III, FALL SEMESTER		UNITS
PCPA 563	Clinical Assignment III	3.5
PCPA 566	Clinical Assignment VI	3.5

PCPA 567	Clinical Assignment VII	3.5
PCPA 568	Clinical Assignment VIII	3.5
		14

YEAR III, SPRING SEMESTER		UNITS
PCPA 532	Clinical Skills IV	3
PCPA 583	Advanced Topics in PA Studies: Education	4
PCPA 586	Advanced Topics in PA Studies: Research	4
PCPA 589	Advanced Topics in PA Studies: Medical Care Organization	4
		15

Requests for further information may be addressed to: USC Primary Care Physician Assistant Program, Keck School of Medicine, University of Southern California, 1000 South Fremont Avenue, Unit 7, Building A11, Room 11-150, Alhambra, CA 91803, or via email at uscpa@usc.edu. The program's Website is usc.edu/pa.

Courses of Instruction

PRIMARY CARE PHYSICIAN ASSISTANT (PCPA)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

PCPA 503 Behavioral Sciences I (4, Fa) First of three-semester sequence in current topics in behavioral medicine, psychological and cultural factors in health and illness, interpersonal and sociological aspects of patient care, and competencies for PA practice. Open to physician assistant practice majors only.

PCPA 506 Behavioral Sciences II (4, Sp) Second of three-semester sequence in current topics in behavioral medicine, psychological and cultural factors in health and illness, interpersonal and sociological aspects of patient care, and competencies for PA practice. Open to physician assistant practice majors only. *Prerequisite:* PCPA 503.

PCPA 509 Behavioral Sciences III (4, Fa) Last of three-semester sequence in current topics in behavioral medicine, psychological and cultural factors in health and illness, interpersonal and sociological aspects of patient care, and competencies for PA practice. Open to physician assistant practice majors only. *Prerequisite:* PCPA 506.

PCPA 523 Clinical Skills I (4, Fa) Laboratory experiences with basic clinical skills essential to medical practice. First of four courses. Open to physician assistant practice majors only.

PCPA 526 Clinical Skills II (6, Sp) Laboratory experiences with basic clinical skills essential to medical practice. Second of four courses. Open to physician assistant practice majors only. *Prerequisite:* PCPA 523.

PCPA 529 Clinical Skills III (6, Fa) Laboratory experiences with basic clinical skills essential to medical practice. Third of four courses. Open to physician assistant practice majors only. *Prerequisite:* PCPA 526.

PCPA 530 Basic Medical Sciences (6, Fa) A one-semester overview of clinical anatomy, physiology, pathophysiology, and pathology essential to understanding disease mechanisms commonly encountered in primary care and specialty practices of medicine. Open to physician assistant practice majors only.

PCPA 532 Clinical Skills IV (3, SpSm) Laboratory experiences with basic clinical skills essential to medical practice. Last of four courses. Open to physician assistant practice majors only. *Prerequisite:* PCPA 529.

PCPA 543 Topics in Medicine I (4, Fa) Basic instruction in normal/abnormal states of organ systems in the study of human disease. The first of three courses that includes instruction in pathophysiology, pharmacology, diagnostic studies, and medicine. Open to physician assistant practice majors only.

PCPA 546 Topics in Medicine II (6, Sp) Basic instruction in normal/abnormal states of organ systems in the study of human disease. The second of three courses that includes instruction in pathophysiology, pharmacology, diagnostic studies, and medicine. Open to physician assistant practice majors only. *Prerequisite:* PCPA 543.

PCPA 549 Topics in Medicine III (6, Fa) Basic instruction in normal/abnormal states of organ systems in the study of human disease. The third of three courses that includes instruction in pathophysiology, pharmacology, diagnostic studies, and medicine. Open to physician assistant practice majors only. *Prerequisite:* PCPA 546.

PCPA 561 Clinical Assignment I (3.5, FaSpSm) One discrete consecutive five-day-a-week intensive field placement under a program-approved supervising preceptor in a program-approved clinical setting. Graded CR/NC.

PCPA 562 Clinical Assignment II (3.5, FaSpSm) One discrete consecutive five-day-a-week intensive field placement under a program-approved supervising preceptor in a program-approved clinical setting. Graded CR/NC.

PCPA 563 Clinical Assignment III (3.5, FaSpSm) One discrete consecutive five-day-a-week intensive field placement under a program-approved supervising preceptor in a program-approved clinical setting. Graded CR/NC.

PCPA 564ab Clinical Assignment IV (a: 3.5; b: 0, FaSpSm) One discrete consecutive five-day-a-week intensive field placement under a program-approved supervising preceptor in a program-approved clinical setting. Graded CR/NC.

PCPA 565ab Clinical Assignment V (a: 3.5; b: 0, FaSpSm) One discrete consecutive five-day-a-week intensive field placement under a program-approved supervising preceptor in a program-approved clinical setting. Graded CR/NC.

PCPA 566 Clinical Assignment VI (3.5, FaSpSm) One discrete consecutive five-day-a-week intensive field placement under a program-approved supervising preceptor in a program-approved clinical setting. Graded CR/NC.

PCPA 567 Clinical Assignment VII (3.5, FaSpSm) One discrete consecutive five-day-a-week intensive field placement under a program-approved supervising preceptor in a program-approved clinical setting. Graded CR/NC.

PCPA 568 Clinical Assignment VIII (3.5, FaSpSm) One discrete consecutive five-day-a-week intensive field placement under a program-approved supervising preceptor in a program-approved clinical setting. Graded CR/NC.

PCPA 583 Advanced Topics in PA Studies: Education (4, Sp) Seminar format: students explore educational theories and methods used by PAs in a variety of settings, including clinical practice, classroom and community. Open to physician assistant practice majors only.

PCPA 586 Advanced Topics in PA Studies: Research (4, Sp) Seminar format: students receive an integrated experience in research methods including methodology, data collection, analysis and evaluation. Open to physician assistant practice majors only.

PCPA 589 Advanced Topics in PA Studies: Medical Care Organization (4, Sp) Seminar format: students will explore current topics in medical care organization and physician assistant practice including administration, financing, changing organizational settings, and workforce issues. Open to physician assistant practice majors only.

Department of Molecular Microbiology and Immunology

Hoffman Medical Research Center 401
2011 Zonal Avenue
Los Angeles, CA 90089-9094
(323) 442-1713
FAX: (323) 442-1721
Email: mmidept@usc.edu
keck.usc.edu/en/Education/Academic_Department_and_Divisions/Department_of_Molecular_Microbiology_and_Immunology

Faculty

Professor and Chair: Jae U. Jung, Ph.D.

Fletcher Jonas Foundation Chair of Molecular Biology and Immunology: Jae Jung, Ph.D.

Rita and Edward Polusky Chair in Basic Cancer Research: Michael Lieber, Ph.D., M.D.

Walter A. Richter Chair in Cancer Research: W. Martin Kast, Ph.D.

Leslie P. Weiner Chair in Neurology and Richard Angus Grant, Sr., Chair in Neurology: Leslie P. Weiner, M.D.

Chair, Graduate Advisory Committee: Stanley M. Tahara, Associate Professor

Professors: S. Chen; G. Coetzee (*Urology*); L. Comai; S.J. Gao; D.A. Horwitz (*Medicine*); M. Lieber (*Pathology, Biochemistry and Molecular Biology*); W.M. Kast; M. McMillan; J.-H. Ou; P. K. Pattengale (*Pathology*); L.P. Weiner (*Neurology*)

Associate Professors: Omid Akbari; E. Bogenmann (*Pediatrics*); P. Cannon; R. Duncan (*Pharmacy*); P. Feng; H.K.W. Fong (*Ophthalmology*); C. Hill (*Radiation Oncology*); A. Jong (*Pediatrics*); J.R. Landolph; H. Lee; A. Schönthal; S. Tahara; E. Zandi

Assistant Professors: R.W. DePaolo; X.F. Huang; C. Liang; K. Machida; T. Saito (*GI Liver-Medicine*); W. Yuan

Associate Professor of Research: S.Y. Park

Assistant Professors of Research: H. Lee; M. Villacres (*Pediatrics*)

Emeritus Professors: F. Aladjem; M. Lieb; G. Dennert

Clinical Assistant Professor: Jie Li

Distinguished Professor, Emeritus: Michael M.C. Lai

The Department of Molecular Microbiology and Immunology is located on the Health Sciences Campus in the Elaine Stevely Hoffman Medical Research Center, in the USC Norris Comprehensive Cancer Center and at the USC Institute for Genetic Medicine. Faculty guidance and specialized facilities are available for advanced research in animal virology, eucaryotic cell biology and cellular differentiation, molecular and cellular immunology, genetic diseases, microbial and molecular genetics, regulation of gene expression, and chemical and viral carcinogenesis.

Graduate Programs

Admissions

An applicant to the graduate programs in molecular microbiology and immunology must have a bachelor's degree from an accredited college or university with a major in science — usually biology, chemistry or physics. The applicant must have demonstrated strength in science or mathematics. Undergraduate course work should have included at least one year of biology, chemistry through organic chemistry, mathematics through calculus, physics and physical chemistry. Deficiencies may be made up early in the predoctoral program.

The department encourages applicants to contact its office prior to making formal application. Each applicant must pass satisfactorily the general and advanced (biochemistry, cell and molecular biology or biology, chemistry or physics) portions of the Graduate Record Examinations, and must also arrange for three letters of

recommendation to be written. In addition, the applicant must provide a one-page statement of career objectives, including the general area of research interest. This statement is intended to facilitate selection of those students who will most benefit from the department's graduate program. A personal interview is strongly recommended but not required.

Applicants who have attended graduate school at another university may be admitted to advanced standing upon recommendation of the department.

Training Grants and Fellowships

Incoming domestic students may be supported by a departmental training grant or by a research grant to a specific faculty mentor during their first year; subsequently, students are supported by research grants awarded to individual faculty members. International students are supported by research assistantships.

Master of Science

The primary objective of the Master of Science program is to prepare students for a career in the broad field of biomedical sciences with focus on, but not limited to, microbiology, virology, immunology and cancer research. This program provides extensive theoretical preparation in combination with hands-on research, where students are trained in research laboratories located on the Health Sciences Campus (HSC), comprising the Keck Medical School, the School of Pharmacy and the USC Norris Comprehensive Cancer Center, or located at Children's Hospital Los Angeles (CHLA).

Goals of the program are to prepare students for employment opportunities in: academic research or teaching at universities, institutes or not-for-profit research centers; research and development in industry (biotech, pharma, petrol, dairies, breweries); health care (hospitals and health care providers, medical technology, diagnostic laboratories); law firms (patents, intellectual property rights, technology transfer, toxic torts); environmental organizations (advisory, management, planning); government (public health, waste management, EPA, FDA, NIH, etc.); publishing (journalism, journal editor).

Admission Requirements Applicants are expected to have a bachelor's degree in science (usually biology, chemistry or physics) from an accredited college or university. Generally required courses include: at least one year of college-level biology, chemistry through organic chemistry, mathematics through calculus, and one year of college-level physics. Students who do not meet all requirements may still apply, and admission will be decided on a case-by-case basis. In general, a minimum undergraduate GPA of 3.0 is expected. Additionally, a student must take the Graduate Record Examinations (GRE), and a minimum score of 1000 is expected. International applicants are expected to provide results from the International English Language Testing System (IELTS) or the Test of English as a Foreign Language (TOEFL; results from Internet-based, computer-based or paper-based tests are acceptable).

Course Requirements A total of 34 units is required. Students may pursue a thesis option, which requires completion of MICB 594abz (2-2-0) plus 30 units of approved course work, no more than 8 of which can

be MICB 590 Directed Research. Students pursuing a non-thesis option must complete 34 units of approved course work. Students must choose one of these options by the end of the first year of study.

Fourteen or more course units must be taken in the Department of Molecular Microbiology and Immunology; 8 units may be pursued outside the department and, upon approval, a maximum of 8 units of directed research in molecular microbiology and immunology may be applied to the degree. No more than 4 units of course work taken outside of USC can be applied toward the M.S. degree requirements. Students considering such an action should submit a petition to the department and document a rigorous academic standard for the course (reading materials, tests and other performance criteria, lecture content, etc.). The graduate advisory committee will review the petition and inform the student of its decision.

Doctor of Philosophy

The Department of Molecular Microbiology and Immunology offers a Ph.D. degree program geared toward training students for future independent research careers in an academic or industrial setting. The program introduces students to research early in their first year through rotations in laboratories. Subsequent required course work in basic and advanced topics and an intensive research experience are designed to foster independent and critical thinking.

Students normally select a faculty research adviser for their dissertation by the end of their first year.

Course Requirements A minimum of 60 units of graduate study is required for the Ph.D. degree; at least 30 of these must be taken at USC. Because the background of applicants varies widely, the department's graduate advisory committee consults with each student to design an individualized schedule of prescribed courses. In the course of their program, all students are expected to become familiar with the principles of microbiology and general biochemistry and to study advanced biochemistry, microbial physiology and genetics, immunology, virology, molecular biology, and chemical and viral oncology.

Screening Procedure Before completing more than six courses (24 units) in regular graduate status, each student is required to pass a written screening examination administered at the end of the first year of graduate study. This examination consists of questions submitted by the faculty and is intended to expose any areas of weakness in the student's abilities. After passing the screening examination, the student is expected to select an area of research and obtain the consent of a member of the department to serve as research adviser.

Qualifying Exam Committee The department's graduate advisory committee serves as the advisory committee for all first- and second-year graduate students. To replace the graduate committee, a five-member qualifying exam committee is appointed for each student after the departmental screening examination is passed. The qualifying exam committee is responsible for counseling the student, preparing the student for the qualifying examination, administering the examination, and recommending advancement of the student

to candidacy for the Ph.D. degree. The student may recommend a chair for this committee, who must be a departmental faculty member but not the student's Ph.D. adviser. Appointment of the chair is subject to approval of the student's research adviser, the department chair and the graduate advisory committee. Other committee members must include three faculty members from within the department (other than the student's Ph.D. adviser) and one faculty member from another Ph.D. granting department. Members of the committee must be approved by the department chair and the full training committee faculty and are officially appointed by the dean of graduate studies.

Qualifying Examination Students in the Ph.D. program must pass both the written and oral portions of the qualifying examination administered by their qualifying exam committee during the second year of graduate study. The examination consists of a research proposition that must be presented in written form and defended orally. The written proposition is an independent research proposal, outside of the student's immediate area of thesis research and supported by documentary references.

The graduate advisory committee and the qualifying exam committee will instruct the student in how to prepare the proposition in appropriate subdisciplines of microbiology. The final draft of the written proposition must be submitted to the department faculty at least two weeks in advance of the oral examination. The oral examination is open, and all members of the department faculty may participate in questioning the student. The examination will include exploration of the student's written proposition but need not be restricted to it; faculty may also question the student on relevant areas of science covered in course work or in current scientific literature. All portions of the oral examination must be completed at the same time.

Final evaluation of the examination is by vote of the qualifying exam committee alone. If there is more than one dissenting vote from the qualifying exam committee, the student is judged to have failed the examination. At the discretion of the committee, the student may be allowed to repeat the examination once within a period of one year from the date of the original examination but not before six months.

Annual Research Appraisal (ARA) Beginning in the second year, each graduate student presents a progress report to his or her research committee. For students not yet appointed to candidacy, their major adviser, one faculty member from within the department and one faculty member from outside the department comprise the committee. Students appointed to candidacy meet with their dissertation committee. Prior to the meeting, the student prepares a short written document describing significant experiments, problems and projected studies. This document is distributed to committee members and is included in the student's file. The ARA meeting is intended to be a working session between the student and his or her committee; experimental results and problems are discussed within this context. In addition the student presents a research plan for the next year of work.

A satisfactory ARA is required of every student for each year in residence.

A final ARA is required before the student is permitted to write the dissertation. The student collects and organizes all experimental data to be written into the dissertation as the final ARA document. This will be considered a preliminary draft of the dissertation. At the conclusion of the final ARA meeting, the dissertation committee will either recommend further experiments or approve the document and give permission for writing the dissertation.

Advancement to Candidacy When the student has successfully passed the qualifying examination, the qualifying exam committee recommends the student's advancement to candidacy for the Ph.D. degree. Admission is by action of the dean of graduate studies. At this time the qualifying exam committee also approves the student's dissertation topic.

Dissertation Committee After advancement to candidacy and approval of the dissertation topic, and with the unanimous recommendation of the committee to the dean of graduate studies, the qualifying exam committee may be reduced to a three-member dissertation committee. Members of the dissertation committee should include the student's research adviser as chair, another faculty member from the department and one faculty member from outside the department; additional members may be appointed. This committee is responsible for counseling the student during preparation of the dissertation, and conducting the final oral examination during the dissertation defense.

Dissertation and Oral Defense The student's research is reported in a dissertation written under the guidance of the research adviser. The dissertation must demonstrate the student's capacity for independent research, scholarly achievement and technical mastery of a special field. When the final draft of the dissertation is ready, the student will take the final oral examination, which is open to the university community. This examination is a defense of the major research conclusions of the dissertation.

All doctoral candidates must be registered in 794 Doctoral Dissertation each semester (excluding summer sessions) from the time of their advancement to candidacy until their dissertation is approved for final text preparation. Under exceptional circumstances students may be excused from registration for a semester by petitioning the Graduate School for a leave of absence. The granting of a leave does not alter the student's responsibility to meet the time schedule for completion of all degree requirements.

Time Requirements It is the policy of the department to encourage students to complete the degree program for the Ph.D. as rapidly as possible. Ph.D. degrees are currently taking an average of four-and-a-half to five years. The university requires that the student complete the degree within six or eight years of the date on which USC graduate work commenced, depending upon whether the student was admitted with a prior applicable master's degree. Extensions may be granted for compelling reasons, but in no case may the time be extended for more than two years.

Courses of Instruction

MOLECULAR MICROBIOLOGY AND IMMUNOLOGY (MICB)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

MICB 500L Introductory Medical Microbiology (4, Irregular) A survey of microorganisms which cause human infectious diseases including mechanisms of pathogenesis, principles of antibiotic usage, pertinent microbial genetics; lectures, laboratories and demonstrations. *Prerequisite*: one year general biology, one semester biochemistry.

MICB 501 Introduction to Immunology (1, Irregular) Basic introduction into molecular, cellular, and clinical immunology for second year medical students and graduate students in Microbiology. (Duplicates credit in BISC 450L.)

MICB 502 Molecular and Cellular Immunology (2, max 8, Irregular) Specific topics to be scheduled on a yearly and rotating basis. *Prerequisite*: MICB 501.

MICB 503 Current Topics in Immunology (1, max 8, Irregular) Discussion forum on the diverse areas of research which constitute modern immunology. *Prerequisite*: MICB 501.

MICB 504 Molecular Biology of Cancer (4, Sp) (Enroll in INTD 504)

MICB 522 Infection and Host Responses (4, Sp) (Enroll in INTD 522)

MICB 531 Cell Biology (4) (Enroll in INTD 531)

MICB 542 Animal Virology (2, max 6, Irregular) Virus structure and chemistry; virus-cell interactions; aspects of virus genetics; molecular biology; pathogenesis, immunology, and evolution of viral infections.

MICB 549 Student Seminar Series (1, max 8, FaSp) Microbiology students will present research seminars describing their thesis progress.

MICB 550 Microbial Pathogenesis (2, Irregular) Critical discussion of recent developments in pathogenesis of select microbial, viral and parasitic agents with particular emphasis on molecular factors and their synergistic (antagonistic) actions.

MICB 551 Prokaryotic Molecular Genetics (4, Fa) Macromolecular processes and their regulation in prokaryotes; DNA replication, transcription, and post-transcriptional events in general and as related to operations, phage biology, and eucaryotic organelles.

MICB 560 Recent Advances in Microbiology (1, max 6, Irregular) Intensive examination of selected topics in microbiology. Student presentations and critiques. Required for all graduate students.

MICB 561 Molecular Genetics (4, Sp) (Enroll in INTD 561)

MICB 570 Microbiology Research Seminar (1, max 10, FaSpSm) Critical discussion of current research topics. Students present published and unpublished research results for discussion and critique. *Prerequisite*: current enrollment in Microbiology Ph.D. program.

MICB 571 Biochemistry (4, Fa) (Enroll in INTD 571)

MICB 572 Systems Physiology and Disease I (4, Fa) (Enroll in INTD 572)

MICB 573 Systems Physiology and Disease II (4, Sp) (Enroll in INTD 573)

MICB 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MICB 594abz Master's Thesis (2-2-0, FaSpSm) Credit on acceptance of thesis. Graded IP/CR/NC.

MICB 601 Molecular Biology of Gene Regulation (2, max 8, FaSp) (Enroll in BIOC 601)

MICB 790 Research (1-12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MICB 794abcdz Doctoral Dissertation (2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC.

Department of Pathology

Hoffman Medical Research Center 204

2011 Zonal Avenue, Los Angeles, CA 90089-9092

M.S. Student Adviser: Cheng-Ming Chuong, M.D.,

Ph.D., (323) 442-1296

Ph.D. Student Adviser: Florence M. Hofman, Ph.D.,

(323) 442-1153

FAX: (323) 442-3049

Faculty

Michael E. Selsted, M.D., Ph.D., *Professor and Chair*

Renette and Marshall Ezralow Family Chair in Cancer Therapeutics: Parkash Gill, M.D.

Harold E. Lee Chair in Cancer Research: Michael F. Press, M.D., Ph.D.

Kenneth T. Norris Jr. Chair in Medicine and Hastings Professor of Medicine: Edward D. Crandall, M.D., Ph.D.

Rita and Edward Polusky Chair in Basic Cancer Research: Michael Lieber, Ph.D., M.D.

Rupert and Gertrude Stieger Vision Research Chair: Narsing Rao, M.D.

Gavin S. Herbert Professor of Vision Research: David R. Hinton, M.D.

Professors: V. Askanas (*Neurology*); P.T. Chandrasoma*; T.C. Chen (*Neurological Surgery*); C.-M. Chuong; T.D. Coates (*Pediatrics*); E.D. Crandall (*Medicine*); L. Dubeau; W.K. Engel (*Neurology*); A.L. Epstein; P.S. Gill (*Medicine, Urology*); S. Govindarajan; D. Hinton (*Neurological Surgery, Ophthalmology*); F.M. Hofman (*Ophthalmology, Neurological Surgery*); R.W. Jelliffe (*Medicine*); M.N. Koss; M.R. Lieber (*Biochemistry and Molecular Biology, Molecular Microbiology and Immunology*); T.M. Mack (*Family and Preventive Medicine*); C.A. Miller (*Neurology*); A. Ouellette; P.K. Pattengale (*Molecular Microbiology and Immunology*); M.F. Press; F.P. Quismorio, Jr. (*Medicine*); N.A. Rao (*Ophthalmology*); S. Rasheed; P. Roy-Burman (*Biochemistry and Molecular Biology*)*; M.E. Selsted; R.P. Sherwin; D.K. Shibata; I.A. Shulman; M.R. Stallcup (*Biochemistry and Molecular Biology*); C.R. Taylor; T.J. Triche (*Pediatrics*); H. Tsukamoto

Associate Professors: S. Bellusci (*Surgery*); A. Erdreich-Epstein (*Pediatrics*); B.H. Gross (*Psychiatry and Behavioral Sciences, Medicine*); J.R. Judkins; A. Kovacs (*Pediatrics*); B.W. Kovacs (*Obstetrics and Gynecology*); J.R. Landolph (*Molecular Microbiology and Immunology, Molecular Pharmacology and Toxicology*); H.A. Liebman (*Medicine*); S.E. Martin; S.B. Turkel (*Psychiatry and Behavioral Sciences, Pediatrics*)

Assistant Professors: S. Asgharzadeh (*Pediatrics*); E.P. Kartalov; Y.M. Kim (*Pediatrics*); K. Kobiela; B. Stiles (*Pharmacology and Pharmaceutical Sciences*); D. Tjan

Adjunct Professor: W.M. Blackmore (*Physiology and Biophysics*)

Clinical Professors: R.D. Aller; C.A. Bell; H.N. Canawati; J.N. Carberry; J. Ciciarelli (*Urology*); K.A. Frankel; F.H. Gilles (*Neurological Surgery, Neurology*); D.S. Harrington; R.E. Horowitz; G. Kanel; A. Keyser; L. Khawli; D.V. Kon; O.T. Kuzma (*Medicine*); D.H. Mills; D.L. Moyer; J. Nelson; P. Nichols; P.N. Rao; C. Rogers; A.A. Roscher; L. Sathyavagiswaran (*Medicine*); S.-R. Shi; S.V. Sostrin; A. Verity

Clinical Associate Professors: C. J. Cobb; M.M. Cosgrove; B.D. Florentine; T.E. Howard; G. Pezeshkpour; M. Pietruszka; A.S.S. Raza; J.S. Wollman

Clinical Assistant Professors: J.D. Augustine; A. Baltayan; E. Carpenter, Jr.; J.A. Chan; W. Chick; O. Chinwah; P.D. Colman; E.C. Dinovo; R. Djabourian; R. Gellibolian; K.E. Grimm; M.D. Haimowitz; M.T. Kiyabu; B. Kwok; B.J. Le Berthon; M.S. Lewis; K. Matsuda; V. Nelson; S.D. Oh; M. Osby; L.A. Pena; R. Phan; G. Pinsky; S.T. Pullarkat; V. Richters; L.A. Scheinin; R.A. Soni; J.P. Tovar; K.J. Young; S.K. Young

Professors of Clinical: R.K. Brynes; K.-M. Chan; D.L. Commins; J.F. Emerson; D.B. Endres; J.C. Felix (*Obstetrics and Gynecology*); E.M. Gomperts (*Pediatrics*); A.L. Hiti; Y. Iwaki (*Urology, Surgery*);

P. Mhawech-Fauceglia; W.Y. Naritoku; M.R.G. O'Gorman (*Pediatrics*); L.M. Petrovic; A.E. Sherrod; H. Shimada; S. Wu (*Pediatrics*)

Professors of Research: J. Groffen (*Pediatrics*); E. Heisterkamp (*Pediatrics*)

Associate Professors of Clinical: N.J. Barr; D.B. Casebolt; A.N. Fedenko (*Orthopaedic Surgery*); D. Hawes; S. He (*Ophthalmology*); A.R. Judkins; Y. Ma; L.L. Wang (*Surgery*); G.D. Zeger

Assistant Professors of Clinical: J. Dien Bard; R.C. Bender; J.A.M. Benjamin; M. Burnett (*Neurology*); A.J. Correa; C.E. Day; W.A. Elatre; X. Fu; G.H. Kim; N.E. Klipfel; K.K.Y. Lai; M. Shamszadeh; M.E. Sibug Saber (*Ophthalmology*); I. Siddiqi; J.D. Vallone; L. Wang; Y. Wang; S. Zhou

Visiting Associate Professor of Clinical: P.M. Ward

Associate Professors of Research: W. Cozen (*Preventive Medicine*); R.B. Widelitz; L. Wu

Assistant Professors of Research: K. Asahani; D.E. Feldman; T. Jiang; R.D. Ladner; R.A. Moats (*Radiology*); K.A. Nash; P. Tongaonkar; P. Wu; Jun Xu; J.F. Zhong; D. Zhu

Research Assistant Professors: P. Hu; N.W. Marten; Y. Ouyang

Resident Clinical Instructors: S. Acree; M. Afkhami; M. Aron; M. Boonyasampant; E. Broxman; D. Cortez; A. D'Auria; K. Duncan; N. Ellis; J. Friedman; A. Garcia; Juan Guo; T. Hacopian; A. Hagiya; S. Hamidi; M. Holden; B. Kay; K.I. Kersch; G. Kim; C. Lee; X. Li; E. Loo; C. Magana; V. Martin; A. Mathew; F. Medeiros; T. Meneses; E. O'Rourke; C. Pang; M. Pessarakli; O. Press; K. Qidwai; D. Samrao; M. Sharifian; J. Smith; S. Walia; L. Whittedge (Zamis); Y. Xie; E. Yung; H. Zhang

Emeritus Professors: S.B. Chandor; B.N. Nathwani; J.W. Parker; A. Richters; D. Tatter; N.E. Warner; E.T. Wong

Emeritus Associate Professor: A.D. Cramer

Emeritus Clinical Professors: M. Greenblatt; G.G. Hadley; W.H. Kern; E.B. Reilly; D.S. Shillam; R.J. Schroeder

Emeritus Clinical Associate Professor: W.C. Smith

Emeritus Clinical Assistant Professors: R.L. McClure; J.K. Waken

Emeritus Professors of Clinical: J.F.P. Dixon; T.T. Noguchi (*Emergency Medicine*)

Emeritus Associate Professor of Clinical: W.P. Lewis

Emeritus Assistant Professor of Clinical: R.B. Hopper

Emeritus Professor of Research: T.L. Lincoln

**Recipient of university-wide or school teaching award.*

The Department of Pathology provides training for both medical and graduate students. Medical students are trained in general, systemic and cellular pathology, providing them with an understanding and visualization of the basic processes underlying symptoms and clinical courses, as well as the ability to evaluate laboratory findings. This department also contributes to the training of residents and fellows at the LAC+USC Healthcare Network, Keck Hospital of USC and USC Norris Cancer Hospital, and the VA Greater Los Angeles Healthcare Network, providing these residents and fellows with an intensive residency program in anatomic and clinical pathology and offering subspecialty fellowship training in surgical pathology, cytopathology, hematopathology and neuropathology.

The Department of Pathology has a Master of Science program. The two-year M.S. program provides training in the latest technologies and concepts of biomedical research and provides the graduate with enhanced opportunities for positions in biotechnology companies, teaching colleges and various health department/governmental positions.

With more than 87 full-time faculty and more than 40 residents and fellows in training, the USC Department of Pathology is one of the largest pathology departments in the United States. The department is particularly strong in areas of surgical pathology, cytopathology, hematopathology, immunocytochemistry, immunopathology, neuropathology, and AIDS-related research. The department maintains active research programs in hematopathology, neuropathology and translational cancer research and has begun to expand its base in radioimmunomaging and immunotherapy. It also has ongoing research projects in the new areas of molecular and genetic pathology. Since October 2003, the VA Greater Los Angeles Healthcare System Pathology Residency Training Program has been incorporated with the LAC+USC Medical Center Pathology Residency Training Program.

The department provides diagnostic laboratory services for the LAC+USC Medical Center, the USC Norris Cancer Hospital, the Doheny Eye Institute, Keck Hospital of USC and the USC Clinical Laboratories Group. Approximately 40 of the department's full-time faculty members work in service laboratories throughout the LAC+USC Medical Center, where they are supported by 40 residents and fellows and a technical and clerical staff numbering in excess of 500. The USC Norris Cancer Hospital and Research Institute and Keck Hospital of USC houses seven full-time pathologists, two fellows, two residents and approximately 25 clerical and support staff.

Graduate Programs

General Admissions

Applicants to the graduate program in pathology must have a bachelor's degree from an accredited college or university with an undergraduate major in one of the natural sciences; a minimum cumulative GPA of 3.0 for undergraduate work is required. Applicants must

submit undergraduate transcripts and letters of recommendation from two undergraduate teachers with their application. All applicants must take the general portion of the Graduate Record Examinations (GRE). A combined score of at least 1100 for the verbal and quantitative scores is required. International students whose native language is not English must submit scores from the IELTS (International English Language Testing System) or the TOEFL (Test of English as a Foreign Language) examination. Personal interviews by members of the department's graduate committee may be requested.

Original application materials, except letters of recommendation, should be sent to the Office of Admission, University of Southern California. To expedite consideration of the application, applicants should also send photocopies of the application, transcripts and GRE scores to the Pathology Department's graduate committee secretary, Lisa Doumak. Letters of recommendation should be addressed directly to the secretary, graduate committee. Applications are considered for admission to both the fall and spring semesters.

Residency and Fellowship Programs

The Department of Pathology offers seven first-year residency positions and 28 residency positions in its fully approved four-year training program in anatomic and clinical pathology at the LAC+USC Medical Center. Training is offered in autopsy and surgical pathology, neuropathology, cytology, microbiology, hematopathology, immunohematology, clinical chemistry, toxicology, immunopathology, radioisotopes, cytogenetics, instrumentation, management, computer techniques, electron microscopy, molecular pathology and other specialty areas. The Department of Pathology also offers the Accreditation Council on Graduate Medical Education (ACGME) fully credited fellowship training in cytopathology (four positions), hematopathology (two positions) and neuropathology (one position). The Surgical Pathology Fellowship Training Program recently received five years full accreditation of their program (seven positions).

Master of Science in Experimental and Molecular Pathology

The Department of Pathology offers a program for the master of science degree with a major in experimental and molecular pathology. The primary objectives of this program are to provide the necessary theoretical and practical training in experimental pathology that culminates with the master of science degree. Goals of the program are to train students in preparation for senior research staff or senior technician positions in academic or industrial institutes, further M.D. or Ph.D. study, consultancies requiring multidisciplinary backgrounds or advanced teaching positions in community colleges.

Admissions The prerequisite for applicants to this program in pathology is a bachelor's degree with an undergraduate major in one of the natural sciences. A minimum GPA of 3.0 in the natural sciences (including mathematics) is usually required. Applicants must achieve a competitive score on the general portions of the Graduate Record Examinations (GRE). In addition, the department requires at least three letters of recommendation from faculty members who can evaluate the

applicant's potential for graduate work. Demonstrated proficiency in the English language is required. International students whose native language is not English must submit scores from the IELTS (International English Language Testing System) or the TOEFL (Test of English as a Foreign Language) examination. Special circumstances may provide consideration for conditional admission.

Course Requirements At least 34 units of graduate study are required. The required courses include INTD 522 Infection and Host Responses (4), INTD 531 Cell Biology (4), INTD 550 Introduction to Pathology (4), INTD 551 Pathobiology of Disease (4), INTD 571 Biochemistry (4), PATH 552ab Methods in Experimental Pathology (5) and PATH 570ab Seminar in Pathology (2). Fourteen or more course units must be taken in the Department of Pathology, 8 units may be pursued outside the department, and a maximum of 8 units of directed research in pathology may be applied to the degree. No more than 4 units of course work taken outside of USC should be applied toward the M.S. degree requirements. Students considering such an action should submit a petition to the pathology graduate committee and document a rigorous academic standard for the course (reading materials, texts and other performance criteria, lecture content, etc.). The pathology graduate committee reviews the petition and informs the student of its decision.

Master's Examinations/Master's Thesis

The Master of Science has the option of either an experiment-based thesis or theory-based thesis course of study. Each student's program will be tailored to suit individual needs and background. Students who require training mainly in the knowledge of pathology may opt for the theory-based thesis course of study. Students also have an opportunity to register for directed research (PATH 590). For the experiment-based thesis option, the student must take PATH 594ab Master's Thesis. For the theory-based thesis option, the student must take GRSC 810 Studies for Master's Examination during the semester they plan to graduate if not otherwise enrolled.

Courses of Instruction

PATHOLOGY (PATH)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

PATH 500ab Basic and Applied Systemic Pathology (3-2, Irregular) Clinical, gross, and microscopic study of basic disease processes. Pathophysiology of major organ systems; etiology, pathogenesis and histopathology of important diseases; oral manifestations, clinical recognition.

PATH 531 Cell Biology (4) (Enroll in INTD 531)

PATH 550 Introduction to Pathology (4, Fa) (Enroll in INTD 550)

PATH 551 Pathobiology of Disease (4) (Enroll in INTD 551)

PATH 552ab Methods in Experimental Pathology (a: 3, Fa; b: 2, Sp) Includes advanced techniques in: a: cell biology and protein chemistry; b: DNA analysis. The course is a practical approach to acquaint graduate students with current methodologies and applications used in biomedical research.

PATH 555 Biochemical and Molecular Bases of Disease (4, Sp) (Enroll in INTD 555)

PATH 561 Molecular Genetics (4, Sp) (Enroll in INTD 561)

PATH 570abcd Seminar in Pathology (1-1-1-1, FaSp) Recent advances in the understanding of diseased cells and tissues are reported and discussed using standard seminars, as well as autopsy organ reviews.

PATH 571 Biochemistry (4, Fa) (Enroll in INTD 571)

PATH 572 Systems Physiology and Disease I (4, Fa) (Enroll in INTD 572)

PATH 573 Systems Physiology and Disease II (4, Sp) (Enroll in INTD 573)

PATH 575 Frontiers of Pathology (2, max 8, Sp) Weekly research lectures by leading investigators in the field of homeostatic response to injury such as cell death, inflammation, fibrosis and regeneration.

PATH 580 Cell Cycle Regulation (2, Sp) The course will focus on recent advances in cell cycle research and discuss its potential significance for human development and health care. *Prerequisite:* biochemistry and cell biology.

PATH 581 Essentials of Animal Experimentation (1, Fa) A course providing basic information on the issues and responsibilities of investigators using animals in biomedical research. *Recommended preparation:* graduate standing.

PATH 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PATH 594abz Master's Thesis (2-2-0, FaSpSm) Credit on acceptance of thesis. Graded IP/CR/NC.

PATH 599 Special Topics (2-4, max 8, FaSp)

PATH 620 Neuropathology (2, max 8, Sp) Diseases of the nervous system with special emphasis on disease processes exclusive to that organ system. *Prerequisite:* INTD 550; *corequisite:* INTD 551.

PATH 625 Comparative Pathology (2, Fa) Unifying concept of diseases common to animals and man. Similarities and differences of diseases affecting certain organ systems of animals as compared to man. *Prerequisite:* INTD 550; *corequisite:* INTD 551.

PATH 630 Viral Oncology (2, Sp) Broad aspects of RNA and DNA viral oncology from epidemiology to molecular genetics.

PATH 650 Stem Cell Biology and Medicine (4, Sp) (Enroll in INTD 650)

PATH 790 Research (1-12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PATH 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC.

Department of Pediatrics, Division of Medical Education

Keith Administration Building 211
1975 Zonal Avenue, Los Angeles, CA 90089-9024
(323) 442-2372
FAX: (323) 442-2051

Faculty

Division Head: C.C. Fung

Professors: J.G. Nyquist; B.P. Wood

Associate Professors: C.C. Fung; J. Gates (*Family Medicine*); R.A. Girard; W. May

Assistant Professors: T. Kovin, D. Souder

Instructor: D. Poole

Clinical Faculty: A.M. Alexander; J. Davis; D.L. Fisher; A. Richards

Emeritus Professors: S. Abrahamson; M.A. Hitchcock; K. Hoffman

Established in 1963 as one of the first medical education units in the United States, the division conducts educational programs for four different types of students: medical students; graduate students in education; those teaching in medical and other health professional education settings; and physicians in the postgraduate study of medical education.

The division's primary mission is to enhance the quality of medical education by serving as a resource of educational expertise for planning, developing, and evaluating medical education programs and conducting educational research. Similar activities and programs are conducted with various government and private organizations outside the university.

Major research and training interests of the faculty include the instruction of lay persons to be used as standardized patients for teaching and evaluation, case-based learning, pre-med programs for minority students and interactive video systems.

Administratively, the division is an independent unit in Educational Affairs in the Keck School of Medicine. The faculty hold appointments in the Department of Pediatrics. The division also employs 10 staff and

research assistants. All activities of the division are conducted at the USC Health Sciences Campus.

Fellowship Programs

Teaching and Learning

A Teaching and Learning Fellowship program is offered to health care professionals who are engaged in teaching. The primary goals of this fellowship are to provide participants with multiple ways to teach and evaluate effectively. Through seminars, fellows will gain increased understanding of basic principles of teaching and learning and achieve the skills necessary to apply principles effectively.

Educational Leadership

An Educational Leadership Fellowship program is available for health care professionals with two primary goals: to prepare participants for understanding and serving in positions of leadership and enhance fellows' personal and professional effectiveness. Seminars will explore transformational change, team and community formation, group dynamics, organizational culture and resources.

Health Professions Teachers

From time to time, the division offers special workshops or seminars in various subject areas related to the improvement of instruction. Division staff members are available to plan these special programs on request.

Master of Academic Medicine

The program addresses the unique population of medical and health professions faculty who are focused on leading the academic enterprise for health professionals at the undergraduate, graduate and continuing education levels. The six-semester program consists of 32 graduate units and employs a hybrid model, combining on-campus face-to-face sessions, blended with online course work. For more information, see page 767xx.

Postgraduate Program

Individually tailored programs of study in medical education are available to visiting postdoctoral fellows who wish to gain an understanding of principles, problems and practices in medical education. These visiting fellows may spend from a few weeks to a year in residence, participating in ongoing projects, seminars, readings and independent study.

Department of Physiology and Biophysics

McKibben Hall 51A

1333 San Pablo Street, Los Angeles, CA 90089-9151

(323) 442-1145

FAX: (323) 442-2494

Email: janet.stoeckert@usc.edu

Student Adviser: H. Kaslow, Ph.D., hkaslow@usc.edu

Faculty

Berislav V. Zlokovic, M.D., Ph.D., *Chair of the Department of Physiology and Biophysics and Director of the Center for Neurodegeneration and Regeneration at the USC Zilkha Neurogenic Institute*

Director, USC Research Center for Liver Diseases, Chief, Division of Gastrointestinal and Liver Diseases, USC Associates/Thomas H. Brem Chair in Medicine, and Veronica P. Budnick, M.D., Chair in Liver Disease: Neil Kaplowitz, M.D.

Professors: Michael Arbib (*Computer Science/Engineering*); Thomas Buchanan (*Medicine/Obstetrics and Gynecology*); Vito M. Campese; Timothy M. Chan (*Molecular Pharmacology and Toxicology*); Casey Donovan (*Exercise Science*); Robert A. Farley* (*Biochemistry*); Caleb Finch (*Gerontology and Neurobiology*); Michael Goran (*Preventive Medicine*); Sarah Hamm-Alvarez (*Pharmaceutical Sciences*); Cage S. Johnson (*Medicine/Hematology*); Neil Kaplowitz (*Medicine/GI Liver/Patient Care*); Kwang Jin Kim (*Medicine, Biomedical Engineering*); Herbert J. Meiselman; Austin K. Mircheff; Janos Peti-Peterdi; Alan G. Watts

Associate Professors: Robert H. Chow; Harvey R. Kaslow; Richard L. Lubman (*Medicine/Pulmonary Patient Care*); Alapakkam P. Sampath; Richard Watanabe; Jang-Hyun Youn; Alan S.L. Yu; Li Zhang

Assistant Professors: Steven Mittelman; Joyce Richey; Abhay Sagare

Adjunct Professor: Dwight W. Warren III

**Recipient of university-wide or school teaching award.*

The administrative offices of the Department of Physiology and Biophysics are located on the Health Sciences Campus. Faculty of the department are predominantly located at the Health Science Campus and also at the LAC+USC Medical Center and the University Park Campus.

The graduate program in physiology and biophysics is designed to prepare students for a career in research and teaching in physiology, biophysics and related fields. Faculty of the department guide students toward becoming effective members of today's scientific community by providing an integrated knowledge of physiological systems at several levels of organization. The course of study required of each candidate is planned to meet his or her individual interests and needs.

Faculty guidance and specialized facilities are available for advanced research in the four broad areas of research represented in the department: endocrinology, reproduction and metabolism; neurophysiology; fluid and electrolyte physiology; and cellular and molecular physiology.

Graduate Programs

Admissions

Applicants should have a bachelor's degree in one of the natural sciences. Undergraduate course work in mathematics (including one and a half years of calculus), physics (one year), organic chemistry (aliphatic and aromatic), and biological sciences (one year) is required. Prospective students should also have completed at least two courses from among the following areas: physical chemistry, advanced physics, electronics, histology, physiology, cell biology, computer science, or

biochemistry. Equivalent work will be considered on an individual basis.

Students interested in applying must complete a departmental pre-application available from the director of graduate studies. Graduate Record Examinations scores, complete undergraduate transcripts and three letters of recommendation are required before the application can be considered.

The pre-application procedure should be completed before May 1 for admission to the following fall semester. All applicants must also apply formally to the university. Final acceptance is contingent upon completion of the official admission procedure.

Master of Science

Admission requirements are the same as for the Doctor of Philosophy degree.

Course Requirements The master's degree in physiology and biophysics requires completion of 33 graduate level units with a minimum grade point average of 3.0. All students are required to take the following: INTD 500, INTD 572, INTD 573, PHBI 608ab and/or PHBI 550, PM 510L, and two of the following: INTD 531, INTD 571, NEUR 524, NEUR 531. Students enroll in additional graduate level classes with prior approval of their graduate student adviser. The Master of Science candidate has the option of either a thesis or non-thesis course of study; the thesis option is usually required if more than 6 research units make up a 33-unit course plan. The specific program followed by thesis-option students is tailored to suit individual needs and background in consultation with the academic director of the program and the student's qualifying exam committee. There is no foreign language requirement.

Minimum standards for satisfactory performance and continued enrollment in the M.S. program are an average of 3.0 in all non-research courses, an average of 3.0 in all courses and a grade of B or higher in INTD 572, INTD 573 and PHBI 608a.

Doctor of Philosophy

Course Requirements A total of 60 units of graduate study is required for the Ph.D. degree. All students are required to take INTD 500, INTD 572, INTD 573, PHBI 608ab and/or PHBI 550, PM 510L, and two of the following: INTD 531, INTD 571, NEUR 524, NEUR 531. The balance of the 60-unit requirement will be drawn from advanced physiology courses and seminars, courses from other departments, research and the dissertation. The specific program to be followed by each student is determined in consultation with the student's adviser, qualifying exam committee and the department faculty. There is no foreign language requirement.

Screening Procedure An overall GPA of 3.0 or better and a minimum grade of B (3.0) in all courses given by the department and also in INTD 531 are the minimum requirements for continuation in the Ph.D. program. After completion of the first two semesters of study, the eligibility of each student for continuation in the program will be reviewed by a departmental graduate screening committee. At the discretion of the graduate committee, successful completion of a screening examination may be required for progression to the third semester of graduate study.

Qualifying Exam Committee The qualifying exam committee consists of at least five members, three of whom must be from within the department and at least one of whom must be drawn from the faculty of another department. The chair of the committee will be the student's dissertation adviser.

Qualifying Examination The purpose of the qualifying examination is to give the student a formal opportunity to demonstrate to the faculty that he or she is qualified to conduct independent research. Passing this examination is formal recognition that the student has independently developed a research proposal that is significant and can be reasonably accomplished with available resources.

At least 60 days prior to its scheduled date, the student must petition the Graduate School for permission to take the qualifying examination; the examination must be completed by the end of the semester during which application is made. Students must complete this examination no later than the fifth semester of graduate work. If the student fails to take the examination by this time, the qualifying exam committee will report a failure to pass the examination. The student then has one additional chance to take and pass the examination; this may not occur sooner than six months nor later than one year after the first examination. Applications to take the qualifying examination later than the fifth semester may be considered on an individual basis and must be approved by both the qualifying exam committee chair and the department chair.

The qualifying examination consists of a written and an oral portion. For the written portion, the student must prepare a proposal for a research project. The proposal must be submitted to the members of the qualifying exam committee not less than 10 days prior to the oral portion of the examination. For the oral defense, the student should prepare an oral presentation of the proposal of approximately 30 minutes duration and be prepared to answer questions regarding any topic related to the proposal.

Dissertation and Oral Defense Upon completion of the research project, and with the consent of the dissertation committee, the candidate prepares the written dissertation. After the dissertation has been read by the committee, the candidate must make an oral defense of the work.

Courses of Instruction

PHYSIOLOGY AND BIOPHYSICS (PHBI)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

PHBI 524 Advanced Overview of Neurosciences (4, Fa) (Enroll in NEUR 524)

PHBI 531 Cell Biology (4) (Enroll in INTD 531)

PHBI 550 Seminar in Advanced Cellular, Molecular and Systemic Physiology (1, max 12, FaSp) Lectures and student presentations on advanced topics in molecular, cellular and systemic physiology. Open to integrative biology of disease program, physiology and biophysics, and pathobiology students only. Graded CR/NC.

PHBI 561 Molecular Genetics (4, Sp) (Enroll in INTD 561)

PHBI 571 Biochemistry (4, Fa) (Enroll in INTD 571)

PHBI 572 Systems Physiology and Disease I (4) (Enroll in INTD 572)

PHBI 573 Systems Physiology and Disease II (4) (Enroll in INTD 573)

PHBI 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PHBI 594abz Master's Thesis (2-2-0, FaSpSm) Credit upon acceptance of thesis. Graded IP/CR/NC.

PHBI 599 Special Topics (2-4, max 8, Sp)

PHBI 608ab Advanced Cellular, Molecular and Systemic Physiology (a: 2 or 4, Fa; b: 2 or 4, Sp) Lectures and student presentations on advanced topics in molecular, cellular and systemic physiology.

PHBI 618 Mathematical Modeling in Endocrinology and Metabolism (3, Fa) The application of mathematics to problems including hormone-receptor interactions, tracer kinetics, and regulation of hormones and substrates at the level of the whole organism. *Prerequisite*: Calculus III.

PHBI 650 Mechanisms of Ion and Solute Transport Across Cell Membranes (2, Fa) Biophysical examination of the mechanisms of ion and solute transport across cell membranes; emphasis on the structures of transport proteins and kinetic models of transport. *Recommended preparation*: graduate level course in biochemistry, physical biochemistry, or cell biology.

PHBI 651 Molecular Modeling and Kinetic Simulations in Membrane Transport (2, Fa) Introduction to the principles of mathematical modeling of biological systems and molecular dynamics simulations, with emphasis on membrane transport. *Recommended preparation*: graduate level courses in biochemistry or physical biochemistry, and cell biology.

PHBI 660 Understanding Diseases of Ion Transport (2, Sp) Examination of the genetics, biochemical mechanisms, and physiological characteristics of diseases caused by inherited mutations in ion channels and ion transport proteins.

PHBI 790 Research (1-12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PHBI 794abcdz Doctoral Dissertation (2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC.

Department of Preventive Medicine

Biostatistics Division
2001 N. Soto Street, Suite 201-A
Los Angeles, CA 90032-3628
Director: W. Gauderman, Ph.D.
(323) 442-1810
FAX: (323) 442-2993
Email: mtrujill@usc.edu
[keck.usc.edu/Education/Academic_Department_and_Divisions/Department_of_Preventive_Medicine](mailto:mtrujill@usc.edu)

Health Behavior Research Division
c/o USC/IPR
2001 N. Soto Street, Suite 201-B
Los Angeles, CA 90032-3628
Director: Mary Ann Pentz, Ph.D.
(323) 442-8299
Email: barovich@usc.edu
[phdhbr.usc.edu](mailto:barovich@usc.edu)

Environmental Health Division
2001 N. Soto Street, Suite 230
Los Angeles, CA 90032-3628
Director: Frank D. Gilliland, M.D., Ph.D.
(323) 442-1096
FAX: (323) 442-3272
[keck.usc.edu/Education/Academic_Department_and_Divisions/Department_of_Preventive_Medicine](mailto:frank.gilliland@usc.edu)

Master of Public Health Program
2001 N. Soto Street, Suite 201-D
Los Angeles, CA 90032-3628
Director: Louise A. Rohrbach, MPH, Ph.D.
(323) 442-8237
Email: oraliago@usc.edu
[mph.usc.edu](mailto:oraliago@usc.edu)

Health Promotion and Disease Prevention Studies Program
3375 South Hoover Street
University Village, Suite E 210
Los Angeles, CA 90089-7798
Director: Elahe Nezami, Ph.D.
(213) 740-1060
FAX: (213) 821-1733
Email: bhealthy@usc.edu
[usc.edu/medicine/hp](mailto:bhealthy@usc.edu)

Global Health Studies
3375 South Hoover Street
University Village, Suite E 210
Los Angeles, CA 90089-7798
Director: Elahe Nezami, Ph.D.
(213) 740-1060
FAX: (213) 821-1733
Email: bhealthy@usc.edu
usc.edu/globalhealthprogram

Faculty

Professor, Chair of Preventive Medicine and Flora L. Thornton Chair in Preventive Medicine: Jonathan M. Samet, M.D.

AFLAC Chair in Cancer Research: Christopher Haiman, Sc.D.

The Dr. Robert C. and Veronica Atkins Chair in Childhood Obesity and Diabetes: Michael I. Goran, Ph.D.

Kenneth T. Norris Jr. Chair in Epidemiology: Brian E. Henderson, M.D.

Verna R. Richter Chair in Cancer Research: Duncan Thomas, Ph.D.

Harry J. Bauer and Dorothy Bauer Rawlins Professor of Cardiology: Howard N. Hodis, M.D.

Professors: S.P. Azen (*Biokinesiology and Physical Therapy, Ophthalmology, Occupational Science*); K. Berhane; R. Bluthenthal; G. Casey, C.-P. Chou (*Social Work*); P. Clarke (*Communication*); G. Coetzee (*Urology, Microbiology*); W.J. Gauderman; S. Gayther; F.D. Gilliland; M. Goran (*Physiology/Biophysics and Pediatrics [CHLA]*); S. Gruskin; R. Haile; B.E. Henderson; H. Hodis (*Medicine*); B. Langholz; T.M. Mack (*Pathology*); Wendy Mack; R. McConnell; B. Meyerowitz (*Psychology*); M.A. Pentz; B. Portnoy (*Pediatrics*); J. Richardson; J.M. Samet; D. Stram; S. Sussman; T. Valente; D.C. Thomas; J. Unger; A. Wu; J. Zhang

Associate Professors: H. Allayee; L. Baezconde-Garbanati; J.C. Chen; M. Cockburn; D. Conti; W. Cozen (*Pathology*); C. Haiman; S. Ingles; S. Ramus; L. Rohrbach; T. Seeman (*Gerontology*); K. Siegmund; D. Spruijt-Metz; P.D. Thomas, Jr.; G. Ursin; R. Watanabe (*Physiology/Biophysics*)

Assistant Professors: B. Berman; C. Breton; C. Curtis; G. Dunton; S. Eckel; M. Franklin; J. Figueiredo; A. Leventhal; J.P. Lewinger; C.L. Pearce; N. Riggs; F. Schumacher; W. Setiawan; H. Wipfli

Professors of Clinical: E.L. Avol; J.T. Casagrande; D. Deapen; A. Hriciko; J.M. McCoy

Associate Professors of Clinical: E. Nezami; D. Van Den Berg

Assistant Professors of Clinical: T. Boley-Cruz; C. Koprowski; L. Liu; K. Monroe; C. Patino-Sutton

Clinical Associate Professor: W.S. Linn

Clinical Assistant Professors: K. Dwyer; J. Schmitz

Professors of Research: T. Alonzo; J.D. Buckley (*Pediatrics*); S. Groshen; M. Krailo; B. Langholz; M.C. Pike; R. Sposto; F. Stanczyk (*Obstetrics and Gynecology*)

Associate Professors of Research: A. Hamilton; P. Marjoram; M. Stern

Assistant Professors of Research: D. Barkauskas; G. Chen; V. Cortessis; L. Chen; J. Davis; G. Dunton; S. Fruin; M. Gago; J. Huh; C. Lane; E. Lee; R. McKean-Cowdin; H. Mi; J. Milam; J. Millsten; L. Raskin; M.T. Salam; P. Sun; H. Volk; T. Zhou

Adjunct Professor: J. Niland

Adjunct Associate Professors: C.N. Bailey-Merz; M.R. Calderon; G. Marks

Adjunct Assistant Professors: J. Lawrence; J.A. Longmate; S.V. McKane; S. Montgomery

Emeritus Professors: Leslie Bernstein; R.K. Peters (*Family Medicine*); S. Preston-Martin

The Department of Preventive Medicine is responsible for training medical, graduate and undergraduate students in the areas of biostatistics, epidemiology, health behavior research, public health, and preventive medicine. Faculty from the statistical genetics and molecular epidemiology department also perform research in the areas of biostatistics, epidemiology of acute and chronic diseases, and environmental health.

The undergraduate and graduate programs offered by the department are noteworthy for the extensive opportunities offered to the students for involvement in faculty research. It is not uncommon for students to begin working closely with faculty members on research projects as early as their first or second year of study.

Degree Programs

The Department of Preventive Medicine offers the following degree programs:

B.S. in Global Health
 B.S. in Health Promotion and Disease Prevention Studies
 B.S. in Health Promotion and Disease Prevention/Master of Public Health
 B.S. in Health Promotion and Disease Prevention/M.S. in Biostatistics
 B.S. in Health Promotion and Disease Prevention/M.S. in Molecular Epidemiology
 B.S. in Dental Hygiene/Master of Public Health
 M.S. in Applied Biostatistics/Epidemiology
 M.S. in Clinical and Biomedical Investigations
 M.S. in Molecular Epidemiology
 M.S. in Biostatistics
 Master of Public Health
 Master of Public Health (online)
 Master of Public Health/Doctor of Medicine
 Master of Public Health (Health Promotion)/Ph.D. in Psychology (Clinical)
 Master of Public Health/Pharm.D.

Master of Public Health/ Master of Planning
 Master of Public Health/Doctor of Physical Therapy
 Master of Public Health/Master of Social Work
 Ph.D. in Biostatistics
 Ph.D. in Epidemiology
 Ph.D. in Molecular Epidemiology
 Ph.D. in Preventive Medicine (Health Behavior Research)

The Department of Preventive Medicine also offers the following undergraduate minor programs:
 Minor in Cinema-Television for the Health Professions
 Minor in Cultural Competence in Medicine
 Minor in Environmental Health
 Minor in Global Health
 Minor in Health Communication
 Minor in Public Health
 Minor in Nutrition and Health Promotion
 Minor in Substance Abuse Prevention

Bachelor of Science in Health Promotion and Disease Prevention Studies

3375 S. Hoover Street
University Village, Suite E 210
Los Angeles, CA 90089-7798
Director: Elahe Nezami, Ph.D.
(213) 740-1060
FAX: (213) 821-1733
Email: bhealthy@usc.edu
usc.edu/medicine/hp

The undergraduate program in Health Promotion and Disease Prevention Studies (HP) provides a well-rounded, professionally focused education leading to the Bachelor of Science degree. The program is concerned with the sociocultural, behavioral, psychological, and biological factors contributing to wellness and disease. It is an ideal major for students interested in medicine, pharmacy, dentistry, public health, epidemiology, health psychology and health behavior research. Areas of study include: global health; cultural diversity in medicine; substance abuse prevention and program planning; nutrition and fitness; health promotion of minority and underserved populations; and general public health issues (e.g., HIV/AIDS, violence, health promotion in the workplace and behavioral medicine).

Program Requirements

The Bachelor of Science degree is awarded after students successfully complete 128 units, consisting of 66 units for the major and fulfillment of USC general education requirements including third semester equivalency in a foreign language.

General Education Requirements

The university's general education program requires six courses plus writing and diversity requirements, which provide a coherent, integrated introduction to the liberal arts and sciences. See pages 63xx and 250xx for more information.

Requirements for the Major (66 units)

The program is divided into core and elective components.

The following core component (42 units) is required of all students.

NON-HP COURSES (20 UNITS)		UNITS
BISC 120L	General Biology: Organismal Biology and Evolution, or	
BISC 121L	Advanced General Biology: Organismal Biology and Evolution	4
BISC 220L	General Biology: Cell Biology and Physiology, or	
BISC 221L	Advanced General Biology: Cell Biology and Physiology	4
CHEM 105aL	General Chemistry, or	
CHEM 115aL	Advanced General Chemistry	4
MATH 116	Mathematics for the Social Sciences, or	
MATH 125*	Calculus I	4
PSYC 100	Introduction to Psychology	4
*MATH 125 allows students who have placed out of MATH 116 to take a higher-level math class; it also satisfies the math requirement for premedical students.		

HP COURSES (22 UNITS)		UNITS
HP 200	Introduction to Health Promotion and Disease Prevention	4
HP 300	Theoretical Principles of Health Behavior	4
HP 320	Biological and Behavioral Basis of Disease	4
HP 340L	Health Behavior Statistical Methods	4
HP 350L	Health Behavior Research Methods	4
HP 480	Internship in Health Promotion and Disease Prevention, or	2-4
HP 490x	Directed Research	2-8

Advanced HP and Health Profession Preparatory Courses

A total of 24 units of electives are required of all students (at least 12 of the 24 must be HP courses).

ELECTIVES (24 UNITS)		UNITS
BISC 320L	Molecular Biology	4
BISC 330L	Biochemistry	4
CHEM 105bL	General Chemistry, or	
CHEM 115bL	Advanced General Chemistry	4
CHEM 322abL	Organic Chemistry	4-4
EXSC 300L	Physiology of Exercise	4
EXSC 301L	Human Anatomy	4
EXSC 407aL	Advanced Exercise Physiology	4
HP 400	Culture, Lifestyle, and Health	4
HP 401	Cultural Competence in Medicine	4
HP 402	Maternal and Child Health	4
HP 403	Behavioral Medicine	4
HP 404	Religion and Health	4
HP 405	Sexually Transmitted Disease: A Global Public Health Priority	4
HP 408	Environmental Health in the Community	4
HP 410	Issues in Prevention and Cessation of Drug Abuse	4
HP 411	Drug Intervention Program Design and Evaluation	4

HP 412	Health Promotion and Prevention Policy	4
HP 420	Gender and Minority Health Issues	4
HP 421	Violence as a Public Health Issue	4
HP 422	AIDS in Society	4
HP 430	Obesity and Health	4
HP 431	Behavior and Education Strategies for Nutrition and Fitness	4
HP 432	Clinical Nutrition	4
HP 433	Advanced Topics in Nutrition	4
HP 434	Physical Activity and Health	4
HP 441	Health Promotion in the Workplace	4
HP 442	Chronic Disease Epidemiology	4
HP 450	Traditional Eastern Medicine and Modern Health	4
HP 460	Adolescent Health	4
HP 465	Health Status of Indigenous Peoples of America	4
HP 485	Global Health: Obesity and Nutrition	4
PHYS 135abL	Physics for the Life Sciences, or	4-4
PHYS 151L	Fundamentals of Physics I: Mechanics and Thermodynamics, and	4
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4
PPD 325	Fundamentals of Health Policy and Management	4
PPD 330	Introduction to Health Care Systems	4
PSYC 336L	Developmental Psychology	4
PSYC 355	Social Psychology	4
PSYC 437	Adolescent Development	4
SOCI 350	Social Exclusion, Social Power, and Deviance	4
SOCI 475	Medical Sociology	4

Bachelor of Science in Global Health Studies

**3375 S. Hoover Street
University Village, Suite E 210
Los Angeles, CA 90089-7798
Director: Elahe Nezami, Ph.D.
(213) 740-1060
FAX: (213) 821-1733
Email: bhealthy@usc.edu
usc.edu/globalhealthprogram**

The Bachelor of Science in Global Health is a multidisciplinary degree of the Keck School of Medicine's Department of Preventive Medicine. This undergraduate program offers an examination of public health and policy issues in the context of global affairs. Students complete course work from Health Promotion and Disease Prevention Studies and International Relations in addition to requirements from other schools of the university. The program provides students with a strong background in understanding and evaluating global health issues and prepares students to become health professionals with international competencies. This program is an ideal major for students interested in medicine, pharmacy, dentistry, international relations,

public health, epidemiology, health psychology and health behavior research.

Program Requirements

The Bachelor of Science degree is awarded after students successfully complete 128 units, consisting of 66 units for the major and fulfillment of USC general education requirements including third semester equivalency in a foreign language.

General Education Requirements

The university's general education program requires six courses plus writing and diversity requirements, which provide a coherent, integrated introduction to the liberal arts and sciences. See pages 63xx and 250xx for more information.

Requirements for the Major (66 units)

The program is divided into core and elective components. As part of the core research requirements, students must complete a directed research requirement, HP 490x, with a specific international research focus.

The core component (42-46 units) is required for all students.

CORE COURSES (32 UNITS)		UNITS
BISC 220L	General Biology: Cell Biology and Physiology, or	
BISC 221L	Advanced General Biology: Cell Biology and Physiology	4
CHEM 105aL	General Chemistry, or	
CHEM 115aL	Advanced General Chemistry	4
ECON 203	Principles of Microeconomics	4
HP 270	Introduction to Global Health	4
HP 320	Biological and Behavioral Basis of Disease	4
HP 470	Case Studies in Global Health	4
IR 308	Globalization: Issues and Controversies	4
MATH 125	Calculus I	4

CORE RESEARCH COURSES (10-16 UNITS)		UNITS
HP 340L	Health Behavior Statistical Methods	4
HP 350L	Health Behavior Research Methods	4
HP 490x	Directed Research	1-8, max 12

Students must choose 24 units of elective course work from the following lists. At least 8 units must be from HP and at least 8 units must be from IR.

HP ELECTIVES (MINIMUM 8 UNITS)		UNITS
HP 300	Theoretical Principles of Health Behavior	4
HP 400	Culture, Lifestyle, and Health	4
HP 401	Cultural Competence in Medicine: Promoting Health in Diverse Communities	4
HP 402	Maternal and Child Health	4
HP 403	Behavioral Medicine	4
HP 404	Religion and Health	4
HP 405	Sexually Transmitted Diseases: A Global Public Health Priority	4

HP 420	Gender and Minority Health Issues	4
HP 422	AIDS in Society	4
HP 450	Traditional Eastern Medicine and Modern Health	4

IR ELECTIVES (MINIMUM 8 UNITS) UNITS

IR 305	Managing New Global Challenges	4
IR 306	International Organizations	4
IR 307	Contemporary International Politics	4
IR 308	Globalization: Issues and Controversies	4
IR 315	Ethnicity and Nationalism in World Politics	4
IR 323	Politics of Global Environment	4
IR 325	Rich and Poor States in the World Political Economy	4
IR 371	Global Civil Society: Non-State Actors in World Politics	4
IR 424	Citizenship and Migration in International Politics	4
IR 444	Issues and Theories in Global Society	4

OTHER ELECTIVES (MAXIMUM 8 UNITS) UNITS

BISC 120LX	General Biology: Organismal Biology and Evolution, or	
BISC 121L	Advanced General Biology: Organismal Biology and Evolution	4
BISC 320L	Molecular Biology	4
BISC 330L	Biochemistry	4
CHEM 105bL	General Chemistry, or	
CHEM 115bL	Advanced General Chemistry	4
CHEM 322aL	Organic Chemistry	4
CHEM 322bL	Organic Chemistry	4
GERO 483	Global Health and Aging	4
PHYS 135aL	Physics for the Life Sciences, or	
PHYS 151L	Fundamentals of Physics I: Mechanics and Thermodynamics	4
PHYS 135bL	Physics for the Life Sciences, or	
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism	4
POSC 442	The Politics of Human Differences: Diversity and Discrimination	4
POSC 451	Politics of Resources and Development	4
POSC 456	Women in International Development	4
PPD 250	Third World Cities	4
PPD 382	International Development	4
SOCI 432	Racial and Ethnic Relations in a Global Society	4
SOCI 460	Key Issues in Contemporary International Migration	4
SOCI 470	Development and Social Change in the Third World	4

Progressive Degree Programs in Preventive Medicine

The Master of Public Health, the Master of Science in Biostatistics and the Master of Science in Molecular Epidemiology programs admit a limited number of undergraduate students to a progressive degree program, which allows them to pursue a master's level degree while completing the bachelor's degree. Applicants to the program must have completed 64 units of course work and must submit their applications prior to the completion of 96 units of course work. Applicants need not submit GRE scores, but are expected to have a minimum GPA of 3.0 at the time of application. The application for admission to a progressive degree program must be accompanied by an approved course plan proposal and two letters of recommendation. The requirements for both the B.S. and the master's degrees must be satisfied, including a minimum of 128 undergraduate units. For further details on progressive degree programs, see page 86xx.

Minor in Cinema-Television for the Health Professions

This minor introduces pre-health students to the theory and techniques of the cinematic arts and to a set of media practices useful for the implementation of health promotion strategies. This minor is designed for students who plan to enter careers or professional programs in medicine after graduation and are interested in working with film and television producers to disseminate accurate health information to the public. It complements major programs such as biological sciences, chemistry, kinesiology, health promotion and disease prevention studies, and environmental studies.

REQUIRED COURSES (24 UNITS) UNITS

CTCS 190	Introduction to Cinema	4
HP 345	Health Issues in Entertainment Media	4
Two of the following:		
HP 370	Introduction to Epidemiology: Methods and Applications	4
HP 401	Cultural Competence in Medicine	4
HP 408	Environmental Health in the Community	4
HP 410	Issues in Prevention and Cessation of Drug Abuse	4
HP 420	Gender and Minority Health Issues	4
HP 421	Violence as a Public Health Issue	4
HP 422	AIDS in Society	4
Eight additional units from the following:		
CTAN 451	History of Animation	2
CTCS 400	Non-Fiction Film and Television	4
CTPR 301	Creating the Non-Fiction Film	4
CTPR 375	Functions of a Director	4
CTPR 385	Colloquium: Motion Picture Production Techniques	4
CTPR 474	Television Documentary Production	4

CTWR 315X	Filmwriting	3
CTWR 412	Introduction to Screenwriting	2
CTWR 416	Motion Picture Script Analysis	2-4

Minor in Cultural Competence in Medicine

This minor is designed for students who plan to enter careers or professional programs in medicine after graduation and are interested in using cultural knowledge to provide more effective health care. The minor focuses on cultural differences in the understanding of health, disease, health care and risk factors unique to specific populations. The minor provides a foundation for students who want to become effective health care providers in an increasingly diverse society. It complements major programs such as biological sciences, chemistry, kinesiology and environmental studies.

REQUIRED COURSES (20 UNITS) UNITS

HP 200	Introduction to Health Promotion and Disease Prevention	4
HP 400	Culture, Lifestyle and Health	4
HP 401	Cultural Competence in Medicine	4
HP 420	Gender and Minority Health Issues	4
One of the following:		
HP 370	Introduction to Epidemiology: Methods and Applications	4
HP 402	Maternal and Child Health	4
HP 408	Environmental Health in the Community	4
HP 410	Issues in Prevention and Cessation of Drug Abuse	4
HP 421	Violence as a Public Health Issue	4
HP 422	AIDS in Society	4
HP 442	Chronic Disease Epidemiology	4
HP 450	Traditional Eastern Medicine and Modern Health	4
HP 460	Adolescent Health	4
PSYC 462	Minority Mental Health	4

Minor in Environmental Health

This minor provides students with a basic understanding of environmental health and its challenges. Curriculum will focus on global health, epidemiology (as it relates to environmental exposures), toxicology and exposure science. Students will be prepared to address and prevent environmental health hazards, promote public health and contribute to the resolution of various environmental health challenges. This minor is ideal for pre-health majors across the university.

REQUIRED COURSES (20 UNITS) UNITS

HP 200	Introduction to Health Promotion and Disease Prevention	4
HP 320*	Biological and Behavioral Basis of Disease	4
HP 408	Environmental Health in the Community	4

HP 446	Poison, People, and Politics	4
HP 448	Global Environmental Changes and Health	4

*Prerequisite required

Minor in Global Health

This minor provides students with a basic understanding of the factors that determine the health of populations around the globe. Curriculum focuses on the cultural, environmental and clinical aspects of various health topics such as maternal and child health, aging, obesity, infectious disease and others. By studying these issues, students from majors across the university will be prepared to assess and contribute to the resolution of emerging global health challenges. This minor will appeal to a wide variety of majors, particularly majors centered on international affairs, business and health care.

REQUIRED COURSES (20 UNITS)		UNITS
HP 270	Introduction to Global Health	4
HP 470	Case Studies in Global Health	4

Three of the following:

GERO 483	Global Health and Aging	4
HP 400	Culture, Lifestyle, and Health	4
HP 401	Cultural Competence in Medicine	4
HP 402	Maternal and Child Health	4
HP 422	AIDS in Society	4

Minor in Health Communication

This minor is designed to appeal to students with a wide range of interests, including those with a general interest in promoting healthy lifestyle practices through effective communication. These students will be prepared to seek jobs in areas such as the managed care industry, hospitals, wellness programs, broadcast and cable companies, and private and governmental agencies, as well as other organizations looking for experts with demonstrated knowledge in health-related fields.

REQUIRED COURSES (20 UNITS)		UNITS
COMM 302	Persuasion	4
COMM 385	Survey of Organizational Communication	4
COMM 443	Health Communication Strategies and Evaluation	4
HP 200	Introduction to Health Promotion and Disease Prevention	4

One of the following:

COMM 304	Interpersonal Communication	4
COMM 308	Communication and Conflict	4
COMM 315	Health Communication	4
COMM 324	Intercultural Communication	4
COMM 375	Business and Professional Communication	4
COMM 402	Public Communication Campaigns	4
COMM 480	Nonverbal Communication	4
COMM 486	Human and Technological Systems in Organizations	4
HP 370	Introduction to Epidemiology: Methods and Applications	4
HP 400	Culture, Lifestyle, and Health	4

HP 401	Cultural Competence in Medicine	4
HP 402	Maternal and Child Health	4
HP 403	Behavioral Medicine	4
HP 408	Environmental Health in the Community	4
HP 412	Health Promotion and Prevention Policy	4
HP 420	Gender and Minority Health Issues	4
HP 421	Violence as a Public Health Issue	4
HP 422	AIDS in Society	4
HP 430	Obesity and Health	4
HP 442	Chronic Disease Epidemiology	4

Minor in Public Health

This minor is designed for students interested in a broad array of health issues. The focus of the minor is on reducing disability and mortality from avoidable injuries and chronic disease, educating the community about healthy lifestyles, assuring access to health care, and measuring changes using various indicators over time. This minor teaches students to meet the challenges of the changing environment of the health care system. It complements a number of majors including psychology, sociology, American studies and ethnicity, biological sciences, economics, environmental studies, kinesiology, gender studies, international relations, philosophy, religion, gerontology and political science.

REQUIRED COURSES (20-24 UNITS)		UNITS
HP 200	Introduction to Health Promotion and Disease Prevention	4
PPD 330	Introduction to Health Care Systems	4

Three of the following:

HP 370	Introduction to Epidemiology: Methods and Applications	4
HP 400	Culture, Lifestyle, and Health	4
HP 401	Cultural Competence in Medicine	4
HP 402	Maternal and Child Health	4
HP 403	Behavioral Medicine	4
HP 408	Environmental Health in the Community	4
HP 410	Issues in Prevention and Cessation of Drug Abuse	4
HP 412	Health Promotion and Prevention Policy	4
HP 420	Gender and Minority Health Issues	4
HP 421	Violence as a Public Health Issue	4
HP 422	AIDS in Society	4
HP 430	Obesity and Health	4
HP 441	Health Promotion in the Workplace	4
HP 442	Chronic Disease Epidemiology	4
HP 460	Adolescent Health	4

Minor in Nutrition and Health Promotion

This minor is designed to appeal to students interested in nutrition, especially in preparation for graduate study

in health-related fields (e.g., medicine, public health) or to enter health-related fields of employment. The focus of the minor is on assessing, planning and evaluating dietary intake of individuals or groups under various conditions of health and disease based upon principles of nutrition and behavioral science. Students in this minor will study factors associated with dietary habits and the development of effective individual and group interventions. It complements majors including psychology, gerontology, biological sciences, chemistry, kinesiology and environmental studies.

REQUIRED COURSES (20 UNITS)		UNITS
HP 230	Nutrition and Health	4
HP 430	Obesity and Health	4
HP 431	Behavior and Education Strategies for Nutrition and Fitness	4

Two of the following:

HP 370	Introduction to Epidemiology: Methods and Applications	4
HP 400	Culture, Lifestyle, and Health	4
HP 401	Cultural Competence in Medicine	4
HP 402	Maternal and Child Health	4
HP 403	Behavioral Medicine	4
HP 412	Health Promotion and Prevention Policy	4
HP 420	Gender and Minority Health Issues	4
HP 432	Clinical Nutrition	4
HP 433	Advanced Topics in Nutrition	4
HP 460	Adolescent Health	4
HP 480	Internship in Health Promotion and Disease Prevention	2-4, max 4
HP 490x	Directed Research	1-8, max 12

Minor in Substance Abuse Prevention

This minor offers students an opportunity to gain an overall understanding of substance abuse as a major modifiable risk factor for illness. It allows students to learn theories of behavior change, to understand the issues in prevention and cessation of drug abuse, and to develop, implement, and evaluate intervention strategies. It complements a number of majors including psychology, sociology, American studies and ethnicity, biological science and gerontology.

REQUIRED COURSES (24 UNITS*)		UNITS
HP 200	Introduction to Health Promotion and Disease Prevention	4
HP 300*	Theoretical Principles of Health Behavior	4
HP 410	Issues in Prevention and Cessation of Drug Abuse	4
HP 411	Drug Intervention Program Design and Evaluation	4

One of the following:

HP 370	Introduction to Epidemiology: Methods and Applications	4
HP 400	Culture, Lifestyle, and Health	4

HP 401	Cultural Competence in Medicine	4
HP 402	Maternal and Child Health	4
HP 403	Behavioral Medicine	4
HP 412	Health Promotion and Prevention Policy	4
HP 421	Violence as a Public Health Issue	4

*Including prerequisite

Graduate Programs — Admissions

Master of Science in Applied Biostatistics/Epidemiology

The department encourages applicants with undergraduate degrees in allied health, pharmacology, public health, medicine, biological and clinical sciences or other related fields. Undergraduate preparation should have included applied statistics, college algebra, an introductory course in calculus and basic computer programming. Applicants should also meet the minimum requirements for admission to the Graduate School. Demonstrated proficiency in the English language is essential. With approval of the Graduate School, applicants not meeting these requirements may be conditionally admitted contingent upon maintaining a GPA of 3.0 for the first 12 units of graduate study.

Master of Science in Biostatistics

The department encourages applicants with undergraduate degrees in mathematics, statistics or biostatistics, computer science or other related fields. Undergraduate preparation should have included differential and integral calculus, introduction to mathematical statistics, and basic computer programming. Applicants should also meet the minimum requirements for admission to the Graduate School. Demonstrated proficiency in the English language is essential. With approval of the Graduate School, applicants not meeting these requirements may be conditionally admitted contingent upon maintaining a GPA of 3.0 for the first 12 units of graduate study.

Master of Science, Molecular Epidemiology

Students with a bachelor's degree in quantitative biological sciences will be eligible for admission. In addition, the B.A. students must have completed at least one year of general biology, one semester of biochemistry and one semester of statistics to be admitted into the Graduate School. Under unusual circumstances, conditional acceptance will be offered to students who do not meet these requirements — allowing them to complete the missing undergraduate courses prior to their full admission into the Graduate School. An introductory biochemistry class is also available in the School of Pharmacy, which may satisfy the biochemistry prerequisite. A joint departmental admission committee will review all applicants.

Master of Public Health

The MPH program has seven tracks: Health Education and Health Promotion, Biostatistics/Epidemiology, Health Communication, Child and Family Health, Global Health Leadership, Public Health Policy and Environmental Health. The curriculum includes a set of core courses for each track and electives. The program also includes a capstone course and an internship placement

that integrates academic and practical experiences and prepares individuals to work in governmental and non-governmental organizations in health-related fields.

The department encourages applicants from the USC undergraduate program in health promotion and disease prevention and throughout the campus, as well as health professionals seeking advanced degrees, medical students who are interested in pursuing an MPH along with their medical degree, nurses who desire a more public health focus, pharmacists and dentists. Applicants should meet the minimum requirements for admission to the Graduate School. Demonstrated proficiency in the English language is essential. With approval of the Graduate School, applicants not meeting these requirements may be conditionally admitted contingent upon maintaining a grade point average of 3.0 (A = 4.0) in PM 501, PM 510L and PM 512 (12 units).

Doctor of Philosophy in Biostatistics

The department encourages applicants with undergraduate degrees in mathematics, statistics or biostatistics, or other related fields. Undergraduate preparation should have included differential and integral calculus, introduction to mathematical statistics and basic computer programming. Applicants should also meet the minimum requirements for admission to the Graduate School. Demonstrated proficiency in the English language is essential. With approval of the Graduate School, applicants not meeting these requirements may be conditionally admitted contingent upon maintaining a GPA of 3.5 for the first 12 units of graduate study.

Doctor of Philosophy in Epidemiology

The department encourages applicants who have undergraduate degrees in allied health, public health, biological sciences or other related fields. Applicants not meeting these requirements may, with approval of the Graduate School, be conditionally admitted contingent upon maintaining a GPA of 3.5 in the first 12 units of graduate studies. Applicants should also meet the minimum requirements for admission to the Graduate School.

Doctor of Philosophy in Molecular Epidemiology

The department encourages applicants who have undergraduate or master's degrees in quantitative biological sciences or other related fields. Undergraduate preparation should include at least one year of general biology, one semester of biochemistry and molecular biology, and one semester of applied statistics. The Ph.D. program is designed to train students for future independent research careers in an academic, government or private sector setting. The objective of the Ph.D. program is to produce a molecular epidemiologist with in-depth laboratory, statistical and analytic skills in both epidemiology and the molecular biosciences. To meet this objective, the program introduces students to molecular/laboratory science and research early in their training.

The program will consider applicants who satisfy all requirements for admission to the Graduate School and demonstrate proficiency in the English language. Applicants not meeting Graduate School requirements for regular standing may, with approval of the Graduate School, be conditionally admitted. Regular standing

is contingent upon maintaining a GPA of 3.5 in the first 12 units of graduate credit.

A student in one of the division's master's programs in biostatistics, epidemiology or molecular epidemiology may be considered for either the Ph.D. in biostatistics, epidemiology or molecular epidemiology prior to completing the M.S. degree, providing he or she has met the requirements for admission to the Ph.D. program, obtained approval of the department's Admission Committee, demonstrated research and writing ability, and passed the doctoral-level screening examination. For further information contact: Mary Trujillo, Program Coordinator, Keck School of Medicine, Department of Preventive Medicine, Division of Biostatistics, 2001 N. Soto Street, Suite #201A, Los Angeles, CA 90032-3628, (323) 442-1810, FAX: (323) 442-2993.

Doctor of Philosophy in Preventive Medicine (Health Behavior Research)

Applicants must have a bachelor's degree from an accredited institution; students entering with an advanced degree may be eligible to transfer course credit. Applicants should also meet the minimum requirements for admission to the Graduate School.

Applicants must supply a completed application for graduate studies, including transcripts from all institutions previously attended, a curriculum vitae (if available), a statement of interest, and three letters of recommendation. For further information contact: Director for Graduate Studies, USC Institute for Health Promotion and Disease Prevention Research, 2001 N. Soto Street, Suite 201B, Los Angeles, CA 90032-3628, (323) 442-8299, FAX: (323) 442-8297.

Doctor of Philosophy in Statistical Genetics and Genetic Epidemiology

This program is designed to train students for future independent research careers in an academic, government or private sector setting. The department encourages applicants who have undergraduate or master's degrees in mathematics, statistics or biostatistics; statistical genetics or quantitative biological sciences; or other related fields. The program will consider applicants who satisfy all requirements for admission to the Graduate School and demonstrate proficiency in the English language.

Master of Science in Applied Biostatistics/Epidemiology

Course Requirements

General requirements include at least 38 units of required courses as follows: 25 units of core courses and at least 9 units of elective courses. In addition, each student must register for four units of 594ab Thesis and write a master's thesis.

CORE COURSES (25 UNITS)		UNITS
PM 510L	Principles of Biostatistics	4
PM 511aL	Data Analysis	4
PM 512	Principles of Epidemiology	4
PM 517a	Research Methods in Epidemiology	3
PM 518a	Statistical Methods for Epidemiological Studies	3

PM 523	Design of Clinical Studies	3
PM 527	Epidemiology of Infectious Disease	4

ELECTIVES (AT LEAST 9 UNITS) UNITS

PM 511bL	Data Analysis	4
PM 515	Behavioral Epidemiology	3
PM 516ab	Statistical Problem Solving	1-1
PM 517b	Research Methods in Epidemiology	3
PM 529	Environmental Health	3
PM 530	Biological Basis of Disease	4
PM 533	Genetic and Molecular Epidemiology	3
PM 590	Directed Research	1-12
PM 611	Advanced Topics in Epidemiology	3

THESIS (4 UNITS) UNITS

PM 594ab	Thesis	2-2
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Electives will be determined by the student's needs and interests and will be approved by the student's adviser. When appropriate, courses not listed above may be chosen with approval of the student's adviser. Sufficient familiarity in computer languages to operate major software packages for data management and analysis is required.

Thesis Requirement

A master's thesis is required of all students. This thesis consists of a research project approved by the faculty and chosen from problems encountered within the department, in other departments of the Keck School of Medicine or university or elsewhere in the community.

Master of Science in Biostatistics

Course Requirements

General requirements include at least 37 units of required courses as follows: 26 units of core courses and at least 7 units of elective courses. Each student must also register for four units of 594ab Thesis and write a master's thesis.

CORE COURSES (26 UNITS) UNITS

PM 510L	Principles of Biostatistics	4
PM 511abL	Data Analysis	4-4
PM 512	Principles of Epidemiology	4
PM 513	Experimental Designs	3
PM 518a	Statistical Methods for Epidemiological Studies	3
PM 522a	Introduction to the Theory of Statistics	4

ELECTIVES (AT LEAST 7 UNITS) UNITS

PM 516ab	Statistical Problem Solving	1-1
PM 518b	Statistical Methods for Epidemiological Studies	3
PM 520	Advanced Statistical Computing	3
PM 522b	Introduction to the Theory of Statistics	4
PM 523	Design of Clinical Studies	3
PM 534	Statistical Genetics	3
PM 544L	Multivariate Analysis	3

PM 552	Survival Methods in Clinical Trials	3
PM 590	Directed Research	1-12
PM 603	Structural Equation Modeling	4
PM 604	Health Behavior Research Methods	4

(or MATH 506, MATH 542, MATH 543, MATH 545L, MATH 547, MATH 548, MATH 549, MATH 550)

THESIS (4 UNITS) UNITS

PM 594ab	Thesis	2-2
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The student's choice of elective courses will be directed by needs and interests and must be approved by the student's graduate adviser. When appropriate, elective courses not listed above may be substituted with approval of the adviser. Sufficient familiarity in computer languages to operate major software packages for data management and analysis is required.

Thesis Requirement

A master's thesis is required of all students. This thesis consists of a research project approved by the faculty and chosen from problems encountered within the department, in other departments of the Keck School of Medicine or university or elsewhere in the community.

Master of Science in Molecular Epidemiology

Course Requirements

The M.S. program requires 37 graduate-level units with a minimum grade point average of 3.0 including epidemiology core courses, 14 units; molecular biology core courses, 12 units; at least 3 elective units; laboratory research plus thesis, 8 units. Students must also complete a master's thesis.

Prerequisite: PM 510 Principles of Biostatistics

EPIDEMIOLOGY CORE COURSES (14 UNITS) UNITS

PM 511aL	Data Analysis	4
PM 512	Principles of Epidemiology	4
PM 518a	Statistical Methods for Epidemiological Studies	3
PM 533	Genetic and Molecular Epidemiology	3

MOLECULAR BIOLOGY CORE COURSES (12 UNITS) UNITS

BIOC 543	Human Molecular Genetics	4
INTD 504	Molecular Biology of Cancer, or	
INTD 555	Biochemical and Molecular Basis of Disease	4
INTD 571	Biochemistry	4

ELECTIVES (AT LEAST 3 UNITS) UNITS

INTD 561	Molecular Genetics/Biology	4
PM 517a	Research Methods in Epidemiology	3
PM 523	Design of Clinical Studies	3

LABORATORY RESEARCH + THESIS (8 UNITS) UNITS

DPT 590abcd	Directed Research	1-1-1-1
DPT 594ab	Thesis	2-2

(1) DPT refers to the department offering the laboratory/directed research experience and thesis supervision. DPT is one of the following departments (but not restricted to): PM, BIOC, PATH.

(2) Laboratories should expose students to: statistical and epidemiological methods, molecular techniques, human genetics, population-based studies.

Master of Public Health

Course Requirements

The master's degree program in public health (MPH) requires a minimum of 47 semester units of required and elective graduate study. The MPH is also available online.

CORE REQUIREMENTS UNITS

PM 501	Foundations in Health Education and Promotion	4
PM 508	Health Service Delivery in the U.S., or	
PM 509	Comparative Health Care Systems	4
PM 510L	Principles of Biostatistics	4
PM 512	Principles of Epidemiology	4
PM 529	Environmental Health: An Epidemiological Approach	4
PM 564	Public Health Leadership and Management	3

In addition, at least another 24 to 28 units including the practicum and capstone, must be completed in one of the following selected tracks: health education and health promotion, biostatistics/epidemiology, health communication, child and family health, global health leadership, public health policy, or environmental health.

Track 1: Health Education and Health Promotion

REQUIRED COURSES (12 UNITS) UNITS

PM 526*	Communication in Public Health, or	
PM 562*	Intervention Approaches for Health Promotion and Disease Prevention	4
PM 528	Program Design and Evaluation	4
PM 563	Organizing and Mobilizing Communities for Public Health	4

At least 4 units from: PM 505, PM 514, PM 525, PM 526*, PM 530, PM 536, PM 542, PM 562*, PM 564 (4 unit courses)

At least 4 units from any 500- or 600-level course

2 units of a practicum (PM 596) and 2 units of the capstone (PM 597), ending in a final report.

*May not receive credit for both track core and track elective category.

Track 2: Biostatistics/Epidemiology

REQUIRED COURSES (AT LEAST 12 UNITS) UNITS

PM 511aL	Data Analysis (SAS)	4
PM 511bL	Data Analysis (STATA)	4

Select one course from the following:

PM 527*	Epidemiology of Infectious Disease	4
PM 536*	Program Evaluation and Research	4
PM 537*	Chronic Disease Epidemiology	4

At least 4 units from:

PM 514, PM 517ab, PM 518ab, PM 527*, PM 530, PM 532, PM 536*, PM 537*, PM 542, PM 546, PM 558 (4 unit courses); PM 515, PM 523, PM 538, PM 586 (3 unit courses)

At least 4 units from any 500- or 600-level course

2 units of a practicum (PM 596) and 2 units of the capstone (PM 597), ending in a final report.

*May not receive credit for both track core and track elective category.

The elective courses will be directed by the student's needs and interests and must be approved by the student's graduate adviser. Sufficient familiarity in computer languages to operate major software packages for data management and analysis is required.

Track 3: Health Communication

REQUIRED COURSES (8 UNITS)		UNITS
PM 526	Communications in Public Health	4
PM 536	Program Evaluation and Research	4

At least 8 units from:

CMGT 510, CMGT 511, CMGT 528, CMGT 583, CMGT 587 (4 unit courses); PM 530, PM 542, PM 562 (4 unit courses); JOUR 508, JOUR 536 (3 unit courses)

At least 4 units from any 500- or 600-level course

2 units of a practicum (PM 596) and 2 units of the capstone (PM 597), ending in a final report.

Track 4: Child and Family Health

REQUIRED COURSES (12 UNITS)		UNITS
PM 528	Program Design and Evaluation	4
PM 580	Foundations of Child Health	4
PM 585	Child Health Policy	4

At least 4 units from: PM 530, PM 540, PM 581, PM 582, PM 583, PM 584, PM 585 (4 unit courses)

At least 4 units from any 500- or 600-level course

2 units of a practicum (PM 596) and 2 units of the capstone (PM 597), ending in a final report.

Track 5: Global Health Leadership

REQUIRED COURSES (12 UNITS)		UNITS
PM 525	Culture and Health: Global Perspectives	4

PM 565	Emerging Trends in Global Health: A Public Health Seminar	4
PM 576	Global Health Research and Programs	4

At least 4 units from:

PM 530, PM 557, PM 563, PM 567, PM 568, PM 577, PM 578 (4 unit courses)

At least 4 units from any 500- or 600-level course

2 units of a practicum (PM 596) and 2 units of the capstone (PM 597), ending in a final report.

Track 6: Public Health Policy

REQUIRED COURSES (16 UNITS)		UNITS
PM 547	Public Health Policy and Politics	4
PPD 501ab	Economics for Policy, Planning and Development	2-2
PPD 555	Public Policy Formulation and Implementation	4
PPD 560	Methods for Policy Analysis	4

At least 2 units from: PM 514, PM 528, PM 530, PM 536, PM 542, PM 548, PM 555, PM 577, PM 578, PM 585, PPD 513, PPD 514, PPD 542, or PPD 560

At least 2 units from any 500- or 600-level course

2 units of a practicum (PM 596) and 2 units of the capstone (PM 597), ending in a final report

Track 7: Environmental Health

REQUIRED COURSES (12 UNITS)		UNITS
PM 553	Human Exposure Assessment for Public Health	4
PM 554	Biological Effects of Environmental Toxins	4
PM 555	Environmental Health, Policy and Practice	4

At least 4 units from: PM 530, PM 556, PM 557, PM 558

At least 4 units from any 500- or 600-level course

2 units of a practicum (PM 596) and 2 units of the capstone (PM 597), ending in a final report.

The elective courses will be directed by the student's needs and interests and must be approved by the student's graduate adviser.

Master of Public Health Online Program

The online program from the Keck School of Medicine of USC is a postgraduate degree program designed for individuals interested in developing their knowledge of public health practice and policy. The program is a comprehensive examination of the five core areas of public health: epidemiology, biostatistics, health policy, environmental and occupational health, and the social and behavioral sciences. The Master of Public Health online degree program will help students develop a

solid foundation in public health practice through in-depth course work and direct interactions with our faculty of experienced public health professionals.

Through a focused public health core curriculum, students will examine and assess the strengths and needs of diverse global communities using biostatistics and principles of epidemiology. Students will study health service delivery in the U.S. or plan, implement and evaluate collaborative health promotion and disease prevention interventions. Discover what it takes to empower communities and examine ways to help build a community's capacity to solve public health problems through collaboration and the placement of trained public health professionals.

Choose one of three tracks to complement public health foundation:

Biostatistics and Epidemiology Track — Learn to use statistical procedures, techniques and methodologies to identify health trends.

Health Education and Promotion Track — Learn to use health education and specific interventions to tackle public health problems.

Global Health Leadership Track — Build leadership skills as you examine the impact of globalization and culture on public health.

Practicum Requirement

A practicum (PM 596) is required of all students. The practicum is provided by an internship rotation through an area of public health practice in a county, state, federal or community-based agency. The practicum offers students the opportunity to observe as well as participate in applying their newly acquired skills and tools. All students are expected to participate in at least one internship and attend a corresponding seminar. An electronic portfolio describing the project and evaluating the outcomes completes the course requirement.

Capstone Requirement

Completion of the capstone course (PM 597) is required of all MPH students during their last semester prior to graduation and is the culminating experience for the master's program. The course draws on students' prior training in the five core areas of public health; their additional required course work in one of seven tracks; and their "real world" experience gained in the field prior to their graduation. The capstone class is closely linked to the MPH practicum and is designed to challenge students to reflect and integrate their training and experience with the goal of developing their own individual point of view regarding the role of public health in contributing to the improvement of the health and well-being of populations in the United States, as well as abroad.

Criteria

Students enrolled in one of the MPH professional dual degree programs (e.g., M.D./MPH, Pharm.D./MPH, DPT/ MPH, and Ph.D. (Clinical Psychology)/MPH, MPA/ MPH) may waive 4 units of the elective requirement and thus are required a minimum of 43 units to graduate. All other students must complete a minimum of 47 units to graduate.

Doctor of Philosophy in Psychology (Clinical)/ Master of Public Health (Health Promotion)

The Ph.D./MPH dual degree combines knowledge of clinical psychology research and practice with an understanding of health from a population perspective. The student enrolls primarily in the clinical psychology doctoral program and may apply to the MPH program during the first year. During the second and subsequent years, course work is taken in both programs. The dissertation is undertaken through the Department of Psychology.

Pharm.D./Master of Public Health

The School of Pharmacy and the Master of Public Health program, in recognition of the rapidly changing health care environment and in response to the growing demand for pharmacists who are knowledgeable in both pharmacy and population-based health care issues, have developed a dual degree program. The joint Pharm.D./MPH degree will enable graduates to be more responsive to today's health care needs and will provide training for pharmacists who seek to be agents of change within the profession and to assume leadership roles in the pharmacy field and in public health at the local, state and national levels.

The Pharm.D./MPH program spans five years (four years of pharmacy school courses and one year of public health courses). Students begin the core MPH courses following the successful completion of the first year of pharmacy school. The last three years of the program are devoted to the clinical rotations of the School of Pharmacy and to the completion of the elective courses and practicum (field experience) of the MPH program.

All students in the Pharm.D./MPH program must meet course requirements, grade point average requirements and program residency requirements of both programs. Students must have a cumulative GPA of 3.0 in the Pharm.D. curriculum and a 3.0 in the MPH curriculum to meet graduation requirements.

The Pharm.D. and the MPH degrees are awarded simultaneously upon completion of the School of Pharmacy and the Master of Public Health requirements.

Application and Admissions Requirements

Students may apply to the dual Pharm.D./MPH degree program in two ways. First, they may apply at the time they submit their Pharm.D. application by concurrently submitting applications to both programs. Students who elect this approach must identify themselves on both applications as potential dual degree students. Students admitted to both programs will be offered admission to the Pharm.D. and will be offered admission to the dual degree program contingent on passing all courses in their first year of the Pharm.D. with a minimum 3.0 G.P.A. Students who are accepted only by one program may choose to attend that program but will not be eligible for the dual degree. Second, students can apply to the dual degree by submitting an application to the MPH program during their first year of enrollment in the Pharm.D. prior to the MPH published application deadline. Students who elect this approach must apply through the School of Pharmacy. Students admitted to the MPH program using this approach will be offered admission to the dual degree contingent on passing all courses in their first year of the Pharm.D. with a minimum 3.0 G.P.A. Students accepted to the dual degree

program must maintain a minimum 3.0 G.P.A. in Public Health and Pharm.D. courses.

Master of Planning/Master of Public Health

The Master of Planning/Master of Public Health (MPI/MPH) dual degree is designed for individuals who envision a career that combines urban planning and public health disciplines. This dual degree combines the knowledge of urban planning with an understanding of health from a population perspective. It will provide training for planning, evaluating and guiding healthy community and urban development, and will enable graduates who seek to be agents of change within the profession to assume leadership roles in planning and in public health at the local, state and national levels. A total of 79 units are required for the dual degree. For further information about dual degree requirements, see the USC Price School of Public Policy, page 897xx.

Master of Social Work/Master of Public Health

The Master of Social Work/Master of Public Health (MSW/MPH) dual degree offers the student interdisciplinary preparation in the fields of public health and social work leading to the Master of Social Work (MSW) and Master of Public Health (MPH) degrees.

The dual degree program is a collaborative effort between the USC School of Social Work and the Department of Preventive Medicine in the Keck School of Medicine. The objectives of the program are to provide students with the knowledge and skills necessary to promote health, prevent disease, and enhance the delivery of health and social services in the community. Students will build interdisciplinary skills and an interdisciplinary professional identity by developing an understanding of the breadth of each field and their interface, while permitting concentration in particular specialization areas. The program prepares graduates for work in a variety of interdisciplinary settings; and for some, it will provide the basis for doctoral study.

Students must complete a minimum of 81 units: 45 units in social work and 36 units in preventive medicine; 16 of these units fulfill requirements for both degrees. Depending on specific social work concentration and public health track requirements, there may be additional courses and an increase in the total number of units. Most students complete both program requirements over three years for full-time students; however, the program can be completed in two years if the student takes a full course load during the two summer sessions. Dual degree students in this program complete the standard foundation year courses during the first year in the School of Social Work with the exception of SOWK 562 Social Work Research. Students may select only the health concentration in social work and either of two public health tracks: health education and promotion; or child and family health.

M.D./Master of Public Health

The joint M.D./MPH program at the Keck School of Medicine is designed for individuals who envision a medical career that combines public health and medical disciplines. For further information about the joint program, refer to page 760xx.

Doctor of Physical Therapy/Master of Public Health

The Post Professional Doctor of Physical Therapy (DPT) and the Master of Public Health (MPH) dual degree program offers the opportunity for physical therapy clinicians to pursue a doctoral-level education in combination with an integrated approach to health care. The program spans four years. Students begin the first one to two years completing MPH core and elective course work in the Department of Preventive Medicine. The remaining two years are devoted to program requirements in physical therapy.

Doctor of Philosophy in Biostatistics

The department offers a degree program leading to the Ph.D. in biostatistics. The program is designed to produce biostatisticians who will have in-depth knowledge of statistical theory and methodology and the ability to apply this knowledge creatively to statistical problems in the biological and health sciences. All students will enroll in a set of core courses that cover both biostatistical theory and applications. Students will then choose from one of four tracks that will allow them to develop expertise in a specific area. The available tracks are: (1) biostatistics theory; (2) statistical genetics; (3) environmental statistics; (4) clinical trials.

Course Requirements

A minimum of 60 units of graduate study is required for the Ph.D. degree; a maximum of 19 of these units may be from research and dissertation. In preparation for the screening examination, all students must take four core courses: PM 511ab and PM 522ab. In preparation for the qualifying examination, students are required to take all remaining core and track-specific courses.

Screening Procedure

A student failing the screening examination will either terminate or will terminate with the M.S. degree upon completion of an acceptable thesis.

Qualifying Exam Committee

A formal qualifying exam committee consisting of five faculty members — four from within the department (one of whom is designated as chair), and one from an outside department offering the Ph.D. degree — will recommend courses in preparation for the qualifying examination.

Qualifying Examination

The written portion of the qualifying examination will comprise testing on track-specific course content and focus on the student's dissertation topic. An oral examination will ascertain the student's competence in orally communicating this knowledge. Students must pass the written portions and the oral portions in order to pass the qualifying examination.

Dissertation and Oral Defense

Upon passing the qualifying examination the Ph.D. candidate and his or her chair will recommend a three-member dissertation committee. The dissertation should be completed within two years and should be oriented toward a theoretical-methodological application to a problem area in the biological or health sciences. The oral defense is based on a rough draft or final

version of the dissertation. The defense is administered by the dissertation committee, with other faculty invited to attend.

PREREQUISITES		UNITS
PM 510L	Principles of Biostatistics	4

REQUIRED COURSES FOR ALL TRACKS

(SCREENING EXAM COURSES)		UNITS
PM 511ab	Data Analysis	4-4
PM 522ab	Introduction to the Theory of Statistics	3-3

RECOMMENDED COURSES: ALL TRACKS

		UNITS
PM 511c	Data Analysis	4
PM 520	Advanced Statistical Computing	3
PM 610	Seminar in Biostatistics and Epidemiology	1

RECOMMENDED COURSES:

BIostatistics Theory Track		UNITS
PM 513	Experimental Designs	3
PM 518ab	Statistical Methods for Epidemiological Studies I, II	3-3

RECOMMENDED COURSES:

Statistical Genetics Track		UNITS
PM 534	Statistical Genetics	4
PM 570	Introduction to Statistical Genetics	4

RECOMMENDED COURSES:

Environmental Statistics Track		UNITS
PM 518ab	Statistical Methods for Epidemiological Studies I, II	3-3
PM 558	Environmental Epidemiology: Concepts, Methods and Practice	4
PM 575	Statistical Methods in Environmental Epidemiology	3

RECOMMENDED COURSES:

Clinical Trials Track		UNITS
PM 513	Experimental Designs	3
PM 518a	Statistical Methods for Epidemiological Studies I	3
PM 523	Design of Clinical Studies	3
PM 552	Statistical Methods in Clinical Trials	3

Elective Courses

BIOC 543, BISC 478, BISC 502ab, BISC 505, BISC 577ab, CSCI 570, CSCI 653, INTD 561, INTD 572, INTD 573, MATH 505ab, MATH 507ab, MATH 509, MATH 520, MATH 541ab, MATH 542L, MATH 543L, MATH 545L, MATH 547, MATH 548, MATH 550, MATH 578ab, PM 511c, PM 513, PM 516ab, PM 517ab, PM 518ab, PM 520L, PM 523, PM 533, PM 538, PM 544L, PM 552, PM 558, PM 565, PM 575, PM 579, PM 599, PM 603, SSCI 581, SSCI 582, SSCI 583, SSCI 585, SSCI 586, SSCI 587, SSCI 589

Doctor of Philosophy in Epidemiology

The department offers a degree leading to the Ph.D. in epidemiology. This program may be an extension of the applied biostatistics and epidemiology M.S. program

and is especially aimed at persons with a strong background in medicine: in particular, students enrolled in the M.D. program of the Keck School of Medicine who wish to interrupt their M.D. studies after two years to complete a Ph.D. degree. This program is designed to produce an epidemiologist with in-depth statistical skills. The program requires a solid core of courses in methodological aspects of statistics and in statistical thinking as applied to medicine, as well as a solid grounding in epidemiological methods and in certain medical disciplines.

Course Requirements

A minimum of 60 course units with a maximum of 20 units of research and dissertation; passing of screening and qualifying examinations; and completion of dissertation and final oral are required. In preparation for the screening examination the student must take the required core course and elective 33 units of master's level applied biostatistics and epidemiology courses. A student failing the screening examination will either terminate or terminate with the M.S. degree upon satisfactory completion of a master's thesis. In preparation for the qualifying examination, the student is required to join an on-going research project under the direction of the chair of the qualifying exam committee and directly participate in the conduct of that project. Credit will be given as PM 790 (4 units, two semesters). In addition, it is recommended that the student take PM 610 (at least two semesters). Electives may be selected with the approval of the chair of the qualifying exam committee from courses in the biological sciences or from the medical school. For students in the M.D./Ph.D. program in epidemiology, satisfactory completion of the first two years of the M.D. program will be considered to provide 20 units toward the Ph.D. degree.

Qualifying Exam Committee

A formal qualifying exam committee, consisting of five faculty members, with at least three from the Department of Preventive Medicine (one designated as chair) and one from a department offering a Ph.D. outside of the Department of Preventive Medicine, will recommend courses in preparation for the qualifying examination.

Qualifying Examination

The written portion of the qualifying examination will test the student's integration of knowledge in biostatistics and medicine. In general, the qualifying examination will present plans for implementation and completion of three components: an independent and complete data analysis arising from ongoing epidemiological study, a "review" paper on an area of epidemiological research, and a grant application for a new epidemiological study.

Dissertation

Upon passing the qualifying examination, the Ph.D. candidate and his or her chair will recommend a three-member dissertation committee. The dissertation should be completed within two years and should be oriented toward a methodological application to a problem area in the biological or health sciences.

The Oral Defense

This examination is based on a draft or final version of the dissertation and will be administered by the

dissertation committee with other faculty invited to attend.

Language and Other Requirements

Proficiency in the English language is essential.

Doctor of Philosophy in Molecular Epidemiology

The Doctor of Philosophy in molecular epidemiology combines molecular and population-based research. The objective of the Ph.D. program is to produce a molecular epidemiologist with in-depth laboratory, statistical and analytical skills in both epidemiology and the molecular biosciences. Applicants who have undergraduate or master's degrees in quantitative biological sciences or other related fields and graduate students in the PIBBS program at USC are encouraged to apply. The program is jointly administered by the Departments of Preventive Medicine and Biochemistry and Molecular Biology.

Course Requirements

Students must complete a minimum of 60 units, with a maximum of 20 units of research and dissertation; pass screening and qualifying examinations; complete the dissertation and the dissertation defense examination. In addition the student is required to join a research project under the direction of one or both of the chairs of the qualifying exam committee and directly participate in the conduct of that project. Credit will be given by the department (DPT) conducting the research project DPT 790 Research (4 units, 2 semesters). In addition, at least two semesters of PM 610 is recommended.

Prerequisites: PM 510 Principles of Biostatistics or the equivalent. INTD 571 Biochemistry or the equivalent.

Biochemistry and Molecular Biology Core Courses (16 units): BIOC 543, INTD 531, INTD 561, INTD 504 or INTD 555.

Preventive Medicine Core Courses (17 units): PM 522aL, PM 512, PM 517a, PM 518a, PM 533.

Suggested Electives (at least 7 units) from: MICB 551, PM 511bL, PM 517b, PM 523, PM 527, PM 529 and PM 534.

Preparation for Screening Examination

The screening examination will be taken after two years in the program. Prior to the screening examination a mentor who will serve on the qualifying exam committee must be identified. The screening examination will consist of a written component and an oral component. The written component will be drawn from the core courses. A student failing the screening examination may be given a second opportunity to retake either one or both portions. Students failing the examination for the second time will terminate with the M.S. degree upon satisfactory completion of 37 units and an acceptable master's thesis.

Annual Research Appraisal (ARA)

Beginning in the second year, each student must register for PM 610 (1 unit) and present an annual progress report to the program oversight committee. Once a dissertation topic has been selected, the annual progress report is presented to the student's qualifying exam

committee. Once the student has passed the qualifying examination and is appointed to candidacy, the annual progress report is presented to the student's dissertation committee. The student will meet annually with the dissertation committee, until he or she graduates from the program. The oral portion of the screening examination as well as the qualifying examination and the defense examination will count as ARAs.

Qualifying Exam Committee

A formal qualifying exam committee will be formed, consisting of five faculty members: two from the Department of Preventive Medicine (one member designated as co-chair); two from the basic science departments (one designated as co-chair with an appointment in biochemistry and molecular biology) and one from an outside department offering a Ph.D. degree (neither preventive medicine or biochemistry and molecular biology). The qualifying exam committee will recommend courses in preparation for the qualifying examination based on the student's research and dissertation topic.

Qualifying Examination

The dissertation topic should be both population-based and functional-based; the molecular/epidemiological nature of the dissertation topic must be agreed on by the qualifying exam committee co-chairs.

Dissertation and Oral Defense

Upon passing the qualifying examination, the Ph.D. candidate and his or her chair will recommend a dissertation committee (typically all five members of the qualifying exam committee). However, the university requires only three members; a three-member dissertation committee must consist of the co-chairs and the outside member. The dissertation should be completed within two years of the qualifying examination. The oral defense examination is based on the final version of the dissertation and will be administered by the dissertation committee and other invited faculty and students. The defense examination should contain a summary of the review article, the completed research and data analyses and the finalized grant proposal.

Doctor of Philosophy in Preventive Medicine (Health Behavior Research)

The Department of Preventive Medicine, Division of Health Behavior Research, offers a degree program in preventive medicine (health behavior), leading to attainment of the Ph.D. The program is designed to train exceptional researchers and scholars in the multidisciplinary field of health behavior research. Students receive a thorough grounding in academic and research experience, encompassing theoretical and methodological training in such allied fields as communication, psychology, preventive medicine, biostatistics, public health and epidemiology. Students receive research experience by participating in projects conducted through the USC Institute for Health Promotion and Disease Prevention Research (IPR). The doctoral program is full-time: students are expected to enroll for fall, spring and summer semesters.

Assistantships

Financial and educational support is provided to qualified doctoral students in health behavior research.

Graduate (research and/or teaching) assistantships are half-time (20 hours per week) and provide tuition remission as well as a monthly stipend.

Computer Language Requirement

Sufficient familiarity in computer languages to operate major software packages for data management and analysis is required.

Course Requirements

The doctoral program in health behavior research is structured as a four to five year course of study for students entering with a bachelor's degree. Time requirements are subject to review and approval by the division's Graduate Program Committee and the Graduate School.

A total of 60 units of graduate study is required for the Ph.D. in health behavior research. Students are required to complete nine core courses: PM 500, PM 511aBL, PM 515, PM 530, PM 601, PM 602, PM 604 and PM 756 (total of 37 units). Other requirements include: two elective PM courses, one not offered by health behavior faculty (minimum of 7 units); and a minimum of 4 units each in PM 590, PM 690abcdz, PM 790 and PM 794abcdz.

For students entering with a bachelor's degree, one of the directed research projects will be equivalent in scope to a master's thesis. All research experiences/projects must be completed before registering for 794abcdz Doctoral Dissertation.

Screening Procedure

The progress of each student is reviewed at the end of every academic year. At the end of the second year of study, students who have not made satisfactory progress are advised that they will be dropped from the program unless their progress improves during their second year.

Qualifying Exam Committee

Each student's qualifying exam committee consists of five members, including: no more than three health behavior faculty members; one other member from the Department of Preventive Medicine; and one member from a doctorate-granting program outside the Department of Preventive Medicine, representing the student's minor field.

Qualifying Examination

Following course work and prior to beginning the dissertation, students must demonstrate written and oral mastery of the general field of health behavior research as well as of their chosen area of specialization. The qualifying process includes a written examination on theory and literature relevant to a selected content area. The examination is administered by the student's qualifying exam committee.

In addition to the qualifying examination, each student is expected to produce the following as evidence of qualification to conduct dissertation research: an academic dossier consisting of a summary of the student's academic record, teaching and research experience, and professional presentations and publications; at least one original empirical research paper of publishable quality, produced in connection with one of the student's courses or research experiences or developed

independently; a dissertation proposal; and an oral defense of all the preceding materials.

Courses of Instruction

HEALTH PROMOTION AND DISEASE PREVENTION STUDIES (HP)

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

HP 101 Current Issues in Medical Education and Healthcare (2, Sp) Current critical issues in healthcare delivery; strategies to succeed in medical school and as physicians.

HP 200 Introduction to Health Promotion and Disease Prevention (4, Fa) Introduction to strategies for promoting health and wellness. Includes self monitoring of health risk behavior, goal setting, and behavior changes.

HP 230 Nutrition and Health (4, FaSp) Nutrition as it relates to health promotion across the lifespan and disease prevention. Discussion of nutrients, factors affecting food choices, food safety and global nutrition issues.

HP 270 Introduction to Global Health (4, Fa) Introduction to concepts of global health and disease control. Issues of globalization, global governance, emerging diseases, infectious disease treatment, and outbreak challenges.

HP 290 Introduction to Research Apprenticeship (2, max 8, FaSp) Individual research apprenticeship in health related fields under supervision of a departmental faculty member. Graded CR/NC.

HP 300 Theoretical Principles of Health Behavior (4, FaSp) Overview and analysis of predictors and consequences of health-related behaviors; theoretical viewpoints and strategies for behavior change. *Recommended preparation:* HP 200; *prerequisite:* PSYC 100.

HP 320 Biological and Behavioral Basis of Disease (4, FaSp) Examination of the major systems of the human body; disease processes and behavioral risk factors. *Prerequisite:* BISC 220L or BISC 221L.

HP 340L Health Behavior Statistical Methods (4, FaSp) Intermediate statistics for health behavior studies; topics include descriptive statistics, hypothesis testing, correlation and regression, and use of computer software in data analysis.

HP 345 Health Issues in Entertainment Media (4, FaSpSm) Study of major chronic illnesses and their risk factors as a foundation for discussions about the portrayal of health and illness in entertainment media. (Duplicates credit in the former CNTV 345.)

HP 350L Health Behavior Research Methods (4, FaSp) Introduction to the design, conduct and evaluation of health behavior research studies; quantitative and qualitative approaches to research and analysis. *Recommended preparation:* HP 340L.

HP 370 Introduction to Epidemiology: Methods and Applications (4) Examines the primary goals and methods of epidemiology, the study of factors that influence health and disease in individuals and populations.

HP 400m Culture, Lifestyle, and Health (4, Sp) Comparison of national and international differences in health status as influenced by cultural practices and lifestyles within geographic, economic and political environments.

HP 401 Cultural Competence in Medicine (4, Fa) Systematic development of specific professional skills for providing effective, culturally sensitive health services to diverse populations. *Recommended preparation:* ANTH 101.

HP 402 Maternal and Child Health (4, Sp) Health issues of women of childbearing age from pre-pregnancy through the postpartum period, and of children from their development in utero through early adolescence. *Recommended preparation:* PSYC 100.

HP 403 Behavioral Medicine (4, Sp) Examines behavioral risk factors for illness, health-enhancing and health-compromising behaviors, stress/coping in promoting health and preventing illness, and behavioral management of chronic illness. *Prerequisite:* PSYC 100.

HP 404 Religion and Health (4, Fa) Differential relationships of religiosity and spirituality with health and risk behaviors, physical and mental health outcomes, coping skills and well-being across cultures and religions.

HP 405 Sexually Transmitted Diseases: A Global Public Health Priority (4) An overview of the magnitude and impact of STDs including prevention, diagnosis, and treatment of common STDs, STD/HIV inter-relationship, global burden, trends, public health challenges, and STD/HIV prevention and control strategies and programs worldwide.

HP 408 Environmental Health in the Community (4) Survey of occupational and environmental health. Introduction to epidemiology, exposure assessment, toxicology, policy development, risk assessment, and effects of urban development on health.

HP 410 Issues in Prevention and Cessation of Drug Abuse (4, Sp) Examination of factors related to drug abuse behaviors; overview and assessment of drug abuse prevention and cessation programs; relapse prevention programs. *Recommended preparation:* HP 300.

HP 411 Drug Intervention Program Design and Evaluation (4, Sp) Strategies for drug abuse prevention and intervention; introduction to techniques and research methods used in designing, conducting, and evaluating drug abuse prevention programs. *Recommended preparation:* HP 410.

HP 412 Health Promotion and Prevention Policy (4, Sp) Overview of health promotion and drug prevention policy at local, state, and federal levels; methods for evaluating policy effectiveness and cost effectiveness.

HP 420m Gender and Minority Health Issues (4, Fa) Examines the nature and roots of health disparities among women, men, and different ethnic and age groups; methods for reducing such disparities; strategies for prevention services.

HP 421 Violence as a Public Health Issue (4, Fa) Patterns and prevalence of violence; psychosocial, environmental, and biological influences on violent behavior; youth gangs; drugs and violence; family violence; and prevention and intervention strategies.

HP 422 AIDS in Society (4, Sp) Provides a broad examination of issues in HIV/AIDS, including behavioral, social, biological, clinical and ethical dimensions of the pandemic in the U.S. and elsewhere.

HP 430 Obesity and Health (4, Fa) Examination of causes and consequences of obesity, with emphasis on health risks of type II diabetes and cardiovascular disease. *Recommended preparation:* HP 230.

HP 431 Behavior and Education Strategies for Nutrition and Fitness (4, Sp) Examination of dietary intake and exercise behaviors as they relate to health and illness; methods for measuring diet and exercise. *Recommended preparation:* HP 430.

HP 432 Clinical Nutrition (4, Irregular) Metabolism of carbohydrates, fats and protein; introduction to vitamins, minerals and dietary modifications in various pathological conditions. *Prerequisite:* CHEM 105a; *recommended preparation:* HP 230.

HP 433 Advanced Topics in Nutrition (4, Sp) In-depth discussion of vitamins and minerals and their role in human nutrition; introduction to the role of vitamins and minerals in selected pathological conditions. *Prerequisite:* HP 432.

HP 434 Physical Activity and Health (4, FaSpSm) Examination of the health impacts of physical inactivity; participation rates across subgroups; physical activity determinants; and interventions, programs, and policies to promote physical activity. *Recommended preparation:* HP 200.

HP 440 Happiness, Well-Being, and Health (4, Sp) Explores human strengths that promote happiness/well-being and whether they influence physical health; mind-body relationships; and strategies for promoting hope, resilience, and quality of life. *Recommended preparation:* HP 200, PSYC 100.

HP 441 Health Promotion in the Workplace (4, Fa) Covers phases of worksite health promotion; research, design, implementation and evaluation; concerns regarding escalating medical costs and the role of health promotion in offering solutions.

HP 442 Chronic Disease Epidemiology (4, Sp) Overview of causative factors and demographic distributions of the major chronic diseases in the western world; epidemiologic concepts and research designs. *Recommended preparation:* HP 320.

HP 443 Communicating Health Messages and Medical Issues (4) (Enroll in COMM 443)

HP 446 Poisons, People, and Politics (4, Fa) Case studies of toxic exposures and investigation of the role of government, scientists, labor and industry in protecting against health threats caused by toxic exposures.

HP 448 Global Environmental Changes and Health (4, FaSpSm) Discussion of global environmental changes, including climate change, air pollution, water pollution, radiation, and their impacts on human health.

HP 450 Traditional Eastern Medicine and Modern Health (4, Fa) Overview of traditional Eastern approaches toward health and disease; relevance to modern health issues, emphasizing a comparison between traditional Chinese and modern Western medicine. *Recommended preparation:* fundamentals of medicine.

HP 460 Adolescent Health (4, Fa) Survey of the development of healthy and the prevention of health-risk behaviors during adolescence. Prevention and promotion techniques will be explored emphasizing cultural differences.

HP 465 Health Status of Indigenous Peoples of America (4, FaSpSm) Survey of indigenous people's health, including health conditions, special cultural and ethical considerations, the Indian health system, and the politics of indigenous health.

HP 470 Case Studies in Global Health (4, Sp) Case study examination of programs and organizational structure underlying current international efforts addressing problems related to infection disease, chronic disease, global environmental change, emergencies and emerging disease epidemics. *Prerequisite:* HP 270.

HP 480 Internship in Health Promotion and Disease Prevention (2-4, max 4, FaSpSm) Field placement in a community agency such as a county health services agency, a not for profit voluntary agency or a health care setting. Open to majors only. Graded CR/NC. *Prerequisite:* completion or concurrent registration in required core courses.

HP 483 Global Health and Aging (4, Fa) (Enroll in GERO 483)

HP 485 Global Health: Obesity and Nutrition (4, FaSpSm) Overview of the epidemiology of obesity and related diseases and the etiology of obesity, including genetic, biological, behavioral, environmental and socio-cultural correlations.

HP 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit. Open to HP majors only. *Corequisite:* HP 340L; *recommended preparation:* HP 350L.

HP 499 Special Topics (2-4, max 8) Lecture and discussion focused on specific topics within health promotion and disease prevention. Course topic will vary from semester to semester.

PREVENTIVE MEDICINE (PM)

PM 500 Foundations of Health Behavior (4, Fa) Overview of behavioral theory and research in disease prevention and health promotion and in adaptation of chronic disease, including an introduction to measures of outcomes. *Prerequisite:* admission to Ph.D. in Preventive Medicine.

PM 501 Foundations in Health Education and Promotion (4, FaSpSm) Overview and application of behavioral theories to the field of health education and promotion. Examines the determinants of health behavior and strategies for change at the individual, group and community level.

PM 505 Training and Curriculum Design in Public Health (4, Sm) Curriculum writing and training skills applied to public health needs and settings. Covers adult learning theories, assessment of learning needs, curriculum design, training design, conduct and evaluation. *Recommended preparation:* PM 500.

PM 508 Health Service Delivery in the U.S. (4, FaSpSm) Historical development of the American health care system; determinants of health care utilization; role of health care providers; health policy; public health services; and health care finance.

PM 509 Comparative Health Care Systems (4, Sp) Macro-level analysis of the structure and delivery of health care services around the world, including an examination and comparison of health system performance.

PM 510L Principles of Biostatistics (4, FaSp) Concepts of biostatistics; appropriate uses and common misuses of health statistics; practice in the application of statistical procedures; introduction to statistical software including EXCEL, SPSS, nQuery. Laboratory.

PM 511abCL Data Analysis (4-4-4, a: FaSp, b: Sp, c: FaSpSm) *a:* Major parametric and nonparametric statistical tools used in biomedical research, computer packages including SAS. Includes laboratory. Lecture, 3 hours; laboratory, 1 hour. *Prerequisite:* PM 510L. *b:* Exploratory data analysis, detection of outliers, robust methods, fitting data with linear and nonlinear regression models, computer packages including BMDP. Includes laboratory. Lecture, 3 hours; laboratory, 1 hour. *c:* Methods and applications for modeling longitudinal, time-to-event and multi-level data. Includes laboratory using R package. Lecture, 2 hours; laboratory, 2 hours.

PM 512 Principles of Epidemiology (4, FaSp) Terminology/uses of epidemiology and demography; sources/uses of population data; types of epidemiologic studies; risk assessment; common sources of bias in population studies; principles of screening. *Recommended preparation:* algebra.

PM 513 Experimental Designs (3, Sp) Statistical methods for analysis of various experimental designs. Parametric analysis of variance (ANOVA), repeated measures methods, crossover designs, non-parametric ANOVA. *Prerequisite:* PM 510L.

PM 514 Detection and Control of Sexually Transmitted Infections (4, Sm) Overview of issues concerning the design and implementation of STI prevention and control programs. Epidemiology, diagnosis, treatment and partner management strategies for common STIs in the U.S. *Recommended preparation:* PM 501, PM 512.

PM 515 Behavioral Epidemiology (3, 2 years, Sp) Basic understanding of behavioral risk factors in chronic disease and premature mortality; epidemiological methods for studying behavioral risk factors. *Recommended preparation:* PM 511ab, PM 512.

PM 516ab Statistical Problem Solving (1-1, FaSpSm) An overview of the tools used by statisticians for solving statistical problems. *Prerequisite:* PM 510L.

PM 517ab Research Methods in Epidemiology (a: 3, Fa, b: 3, Sp) *a:* Study design, ascertainment of study objects, questionnaire development, various methodological issues in data analysis and interpretation including bias, measurement error, confounding and effect modification. *Prerequisite:* PM 511aL, PM 518a. *b:* Overview of epidemiologic research in cancer. Selected cancer sites will be covered to highlight study design and conduct, exposure assessment, data analysis and interpretation. *Prerequisite:* PM 517a.

PM 518ab Statistical Methods for Epidemiological Studies I, II (3-3, Sp) *a:* Principles and methods used in epidemiology for comparing disease frequencies between groups. Restricted to the analysis of binary outcome variables. *Prerequisite:* PM 512. *b:* Statistical methods for binary outcomes by introducing techniques for cross classified risks and rates and regression models for individual data. *Prerequisite:* PM 518a.

PM 519 Introduction to Human Nutrition (4, Sp) Dietary role of carbohydrates, proteins, lipids, vitamins, and minerals in metabolism; nutritional assessment; nutritional deficiencies. Focus on the role of nutrition in the prevention and treatment of chronic disease. (Duplicates credit in former PHNU 527.) *Recommended preparation:* PM 530.

PM 520L Advanced Statistical Computing (3, SpSm) Techniques for the solution of statistical problems through intensive computing; iterative techniques, randomization tests, the bootstrap, Monte Carlo methods.

PM 521ab Seminar in Nutrition (2-2, FaSp) (Duplicates credit in former PHNU 520ab.)

PM 522ab Introduction to the Theory of Statistics (3, FaSp) *a:* Density distribution and hazard functions; normal, chi-square, student's t and F distributions; and sampling procedures for single factor and multiple factor designs, distributions. *Recommended preparation:* working knowledge of multivariable calculus and familiarity with linear algebra. *b:* Theory of estimation and testing, inference, analysis of variance, theory of regression. *Recommended preparation:* college-level calculus and linear algebra.

PM 523 Design of Clinical Studies (3, Sp) Design, conduct, and interpretation of results of clinical trials; emphasis on principles affecting structure, size, duration of a trial, and the impact of ethical and practical considerations. *Prerequisite:* PM 511abL, PM 513.

PM 524abc Practicum in Health Behavior (2-2-2, FaSpSm) Practical experience in a variety of field settings to gain a certain type of skill such as curriculum development, media production, and patient education. *a:* Practicum in prevention; *b:* practicum in compliance; *c:* practicum in health behavior topics. *Recommended preparation:* PM 500.

PM 525 Culture and Health: Global Perspectives (4, FaSpSm) International variations in health status with a focus on the impact of socioeconomic status, politics, environment, education and gender in etiology of illness, access to health care, progression of disease, and recovery.

PM 526 Communications in Public Health (4, Sp) Application of communication theories and methods to community health problems. Includes background assessment, program design, evaluation, social marketing, media advocacy, review of major health campaigns. *Recommended preparation:* PM 500.

PM 527 Epidemiology of Infectious Disease (4, FaSpSm) Survey of natural history of infectious disease, methods of disease control and outbreak investigation, and an overview of the epidemiology of injury. *Prerequisite:* PM 512.

PM 528 Program Design and Evaluation (4, Sp) Core concepts, methods and values of public health program planning and evaluation, including community needs assessment, writing objectives, designing health promotion programs, process and outcome evaluation. *Recommended preparation:* PM 500.

PM 529 Environmental Health: An Epidemiological Approach (4, FaSp) An overview of environmental health, identifying issues in assessing effects of exposure on health and potential interventions for reducing adverse health risks. *Prerequisite:* PM 510L, PM 512.

PM 530 Biological Basis of Disease (4, 2 years, Sp) With a physiological overview, differentiates genetic and environmental disease; emphasis on the relationships between lifestyle, behavior, and health. *Prerequisite:* admission to Ph.D. in Preventive Medicine, Health Behavior Research or basic biology.

PM 531 Research Methods in Nutrition (4, Fa) In-depth discussion of nutrition research including nutrition assessment, measurement of dietary intake, study design, statistical issues, critical appraisal, and translation into practice. Open to M.P.H. nutrition track students only. *Prerequisite:* PM 510, PM 512.

PM 532 Genetics in Public Health and Preventive Medicine (4, Sm) History and philosophy of public health genetics and mechanisms of genetic diseases. Epidemiologic methods used to identify genetic diseases in individuals, families, and populations. Emphasis on prevention and relevant ethical issues. *Recommended preparation:* PM 512.

PM 533 Genetic and Molecular Epidemiology (3, 2 year, Fa) Genetic principles; design and analysis of family studies; introduction to likelihood estimation; segregation and linkage analysis; biomarkers of exposure, susceptibility, and disease; laboratory methods; susceptibility genes; association and linkage disequilibrium. *Prerequisite:* PM 510L, PM 511a, PM 512, PM 518a.

PM 534 Statistical Genetics (4, Sp) Familial aggregation, segregation analysis, linkage analysis, association, regressive models, gene-environment interactions, genetic heterogeneity and linkage disequilibrium. *Prerequisite:* PM 518a, PM 522a.

PM 535 Nutrition in Public Health (4, Fa) Principles related to developing effective programs and services to improve the health and nutrition within a community. Attaining and maintaining nutritional health related to biology, lifestyle choices, environments, and health care delivery systems. (Duplicates credit in former PHNU 523.) *Recommended preparation:* PM 530.

PM 536 Program Evaluation and Research (4, Fa) Overview of concepts, tools, data collection, analysis methods and designs used to evaluate health promotion programs. Examples from substance abuse prevention, family planning and reproductive health programs.

PM 537 Chronic Disease Epidemiology (4, FaSpSm) Overview of causative factors and demographic distribution of major chronic diseases in the western world. Epidemiologic concepts, methods and research design as applied to chronic disease prevention will be emphasized. *Prerequisite:* PM 512; *recommended preparation:* PM 527.

PM 538 Introduction to Biomedical Informatics (3, Sm) Overview of current topics, enabling technologies, research initiatives, and practical considerations in biomedical informatics.

PM 539 Nutrient-Drug Interactions (2, Sm) Examines the various ways foods, and the nutrients contained in them, interact with medications used to treat chronic health conditions.

PM 540 Maternal and Child Nutrition (4) Physiological basis for good nutrition during pregnancy and childhood through adolescence. Design, implementation and evaluation of public health nutrition programs serving women and children. *Recommended preparation:* PM 530.

PM 541 Obesity, Metabolism and Health (4, Fa) Overview of the epidemiology of obesity, related health conditions and mechanisms related to energy balance, food intake and genetics. Discussion of prevention and treatment strategies. *Recommended preparation:* PM 530.

PM 542 Social Network Analysis (4, Sp) Theory, methods and procedures of network analysis with emphasis on applications to public health programs.

PM 543L Nonparametric Statistics (3) (Enroll in MATH 543L)

PM 544L Multivariate Analysis (3, 2 years, SpSm) Exploratory and inferential techniques for multivariate data, Hotelling's T^2 , multivariate analysis of variance, classification analysis, principle components, cluster analysis, factor analysis. Involves computer use. *Prerequisite:* PM 510L, PM 522a.

PM 545L Introduction to Time Series (3) (Enroll in MATH 545L)

PM 546 Biological Threats and Terrorism (4, Fa) History of biowarfare and bioterrorism; proper surveillance techniques, capacity building for public health and medical communities, and the importance of effective communications. Methods of preparedness, prevention and response are examined. *Recommended preparation:* PM 512.

PM 547 Public Health Policy and Politics (4, FaSp) Examination of major policy issues in the U.S. health care delivery system to understand policy options in reforming health care and reducing health care disparities. *Prerequisite:* PM 508.

PM 548 Prevention and Public Policy (2, FaSp) Introduction to prevention policy framework; examination of how the application of epidemiology and behavioral aspects of diseases shapes the development of public health policy. *Prerequisite:* PM 508, PM 512.

PM 549 Human Molecular Genetics (4, FaSpSm) (Enroll in BIOC 543)

PM 550 Sample Surveys (3) (Enroll in MATH 550)

PM 552 Statistical Methods in Clinical Trials (3, 2 years, Sp) Stochastic failure process; parametric models for survival data; sample size estimation procedures for clinical trials; multivariate regression models for binary outcome and censored survival data; computer programs; multiple failure modes and competing risks. *Prerequisite:* PM 518a, MATH 408.

PM 553 Human Exposure Assessment for Public Health (4, FaSpSm) Examination of important routes of exposure to toxic materials; how to measure exposure; strengths and weaknesses of different measurement techniques; design of exposure assessment studies. *Recommended preparation:* PM 510 or one semester of statistics and background in science or engineering for graduate students not in MPH.

PM 554 Biological Effects of Environmental Toxins (4, FaSp) Overview of how environmental exposures affect various biological systems and lead to observed health outcomes in populations. *Recommended preparation:* PM 529.

PM 555 Environmental Health, Policy and Practice (4, FaSp) Examination of environmental public health policies/regulations, the role of science in assessment and policy initiatives, barriers to change, and competing interests that influence policy adoption. *Recommended preparation:* PM 529.

PM 556 Environment and the Brain (4, FaSpSm) An examination of the effects of environmental exposures on the brain, addressing both human health and neurobiological correlates throughout the lifespan.

PM 557 Global Environmental Health (4, Sp) Examination of the health effects of global environmental changes, including climate change, globalization, food safety, air pollution, water pollution, and radiation.

PM 558 Environmental Epidemiology: Concepts, Methods, and Practice (4, FaSp) Examine epidemiologic methods, concepts, and statistical approaches; case-study seminars with structured critiques of current literature on human-environment interactions affecting public health. *Recommended preparation:* PM 510 and PM 512.

PM 561 Promoting Dietary Change (3, Sp) Development, implementation, and evaluation of dietary interventions at community and individual levels. Discussion of lifespan, culture, socioeconomic, and environmental factors. Open to M.P.H. nutrition track students only. *Prerequisite:* PM 501.

PM 562 Intervention Approaches for Health Promotion and Disease Prevention (4, Sp) Approaches for modifying health behavior in various settings and within diverse populations. Emphasis on practical considerations necessary to design and implement interventions with demonstrated effectiveness.

PM 563 Organizing and Mobilizing Communities for Public Health (4, Fa) Survey of effective community organizing and mobilization efforts in the U.S. and abroad, using participatory, organizational, community empowerment and public-private partnership models.

PM 564 Public Health Leadership and Management (3, FaSpSm) Introduction to business and management concepts, tools, and practices in the context of domestic and global healthcare delivery, public health, and allied health industries.

PM 565 Emerging Trends In Global Health: A Public Health Seminar (4, Sp) Current public health issues and research topics relating to 21st century challenges and threats. Lessons learned and best practices to strengthen public health systems and enhance public health readiness and preparedness.

PM 566 Public Health in China: A System and Country in Transition (4, Fa) Scientific, political, economic, social, and historical influences affecting Chinese public health policy and practice. *Prerequisite:* PM 501, PM 510L; *recommended preparation:* PM 512.

PM 567 Floods, Quakes and Human Folly: An Interdisciplinary Approach to Disaster Study (4, Sp) Definition and chronology of natural and man-made disasters and their effects on the global community. Structure and organization of disaster management systems and the role of humanitarian organizations. *Recommended preparation:* PM 501, PM 512.

PM 568 Ethical Issues in International Health Research: Promotion and Intervention (4, Fa) Ethical principles in the distribution of health resources, the conduct of global public health research, and the implementation of public health initiatives and practices across different nations, cultures, religions. *Recommended preparation:* PM 501.

PM 569 Global Health, Law and Human Rights (1-3) (Enroll in LAW 707)

PM 570 Statistical Methods in Human Genetics (4, Sp) An introductory course in the statistical methods used in the analysis of human genetic data. *Prerequisite:* PM 533.

PM 571 Applied Logistic Regression (3, Sm) An introduction to the logistic regression model, emphasizing practical data analysis techniques. *Prerequisite:* PM 510L; PM 512; and PM 511aL or PM 518a.

PM 572 Systems Physiology and Disease I (4, Fa) (Enroll in INTD 572)

PM 573 Systems Physiology and Disease II (4, Sp) (Enroll in INTD 573)

PM 574 Programming In Modern Statistical Software (2, FaSpSm) Programming using SAS Software, including branching, sub-setting, PDV, looping, by-group processing, array, combining data functions, ODS, and macros.

PM 575 Statistical Methods in Environmental Epidemiology (3, FaSpSm) Study designs, exposure-time response, longitudinal, spatial, ecologic correlation and mechanistic models, measurement error interactions, measurement error, public policy implications. *Prerequisite:* PM 511b and PM 518a.

PM 576 Global Health Research and Programs (4, FaSpSm) Introduction to the core concepts and methods of planning and implementing health-related programs and research in resource-constrained settings.

PM 577 Global Health, Law and Human Rights (4, FaSp) Highlights the complex interactions between global health, law and human rights, emphasizing the use of human rights in public health thinking and practice. *Recommended preparation:* MPH core course work.

PM 578 Global Health Governance and Diplomacy (4, FaSp) Investigates the way health is organized and administered at the global level, emphasizing the role of international diplomacy and law in governing health.

PM 579 Statistical Analysis of High-Dimensional Data (4, FaSpSm) Overview of statistical issues and solutions to high dimensional data analysis. Use of Bioconductor and R, with applications in molecular biology. *Recommended preparation:* PM 511a.

PM 580 Foundations of Child Health (4, Sp) Overview of issues related to infant, child and adolescent health, including special health considerations at different points in the developmental cycle, health care systems and policies and health disparities.

PM 581 Quality and Inequality in Health Care: Examination of Health Services (4, Fa) Social inequalities, including racial/ethnic disparities and income related inequalities are examined in the context of access and delivery of health care in the U.S.

PM 582 Epidemiology and Prevention of Pediatric Injuries (4, Fa) Examines the incidence and causes of injuries to children from birth to adolescence, risk factor distributions and approaches to prevention.

PM 583 Foundations of Early Childhood Mental Health (4, Fa) Overview of major infant and early childhood mental health issues, relating to the status of child mental health and the importance of comprehensive systems of care for children that support resilience and respond to biological and psychosocial mental health risks.

PM 584 Systems of Care for Children with Special Needs (4, Sm) Examines and evaluates principles, policies, programs and practices (systems) that have evolved to identify, assess and meet the special needs of children and families. Includes both historical and current perspectives.

PM 585 Child Health Policy (4, Sp) History of child health and social welfare programs during the past century. Issues examining health status and health service delivery, the role of health care financing and health policy.

PM 586 Reproductive and Perinatal Epidemiology (3, FaSpSm) Introduction to reproductive health, from preconception to the neonatal and early period of human development. Heavy emphasis on the methods and public health implications. *Prerequisite:* PM 510L and PM 512.

PM 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PM 593 Public Health Practicum (4 or 8, FaSpSm) Field placement in a community agency, such as a county health department or community-based organization. Open to MPH candidates only. Graded CR/NC. *Recommended preparation:* completion of all course work.

PM 594abz Master's Thesis (2-2-o, FaSpSm) Credit on acceptance of thesis. Graded IP/CR/NC.

PM 596 Practicum in Public Health (2, FaSpSm) Field placement in a public health agency, such as a county hospital department or community-based organization. Graded CR/NC. *Recommended preparation:* completion of all MPH course work.

PM 597 Capstone in Public Health (2, FaSpSm) Provides the culminating, integrative curricular experience for students enrolled in the Master of Public Health program. *Recommended preparation:* completion of all MPH course work.

PM 599 Special Topics (2-4, max 8, Irregular) Special topics relevant to the study of selected issues and areas of health behavior research or other aspects of preventive medicine.

PM 601 Basic Theory and Strategies in Prevention (4, 2 years, Fa) Psychosocial basis of health-hazardous lifestyle behaviors and preventive strategies. *Recommended preparation:* PM 500, PM 515.

PM 602 Basic Theory and Strategies for Compliance/Adaptation (4, 2 years, Fa) Behavioral and psychosocial demands of acute and chronic diseases. Comparison of theoretical models of compliance and adaptation with intervention methods to improve compliance and adaptation. *Recommended preparation:* PM 500, PM 515.

PM 603 Structural Equation Modeling (4, 2 years, Fa) Factor analytic and structural equation modeling approaches to health behavior research — conceptual, practical and mathematical. *Prerequisite:* PM 511b.

PM 604 Health Behavior Research Methods (4, Sp) Health research/evaluation philosophies, approaches, and development of skills for development and critique of health behavior research projects/studies. *Recommended preparation:* PM 511.

PM 610 Seminar in Biostatistics and Epidemiology (1, max 4, FaSpSm) Special topics of current interest to provide background for research in biostatistics and epidemiology. Based largely on student dissertation research. Graded CR/NC. *Prerequisite:* Ph.D. level.

PM 611 Advanced Topics in Epidemiology (3, Irregular) Review of current epidemiologic research contained in recent medical literature; emphasis on critique of studies and interpretation of findings.

PM 612abc Clinical Translational Research (CTR) (4-4-4, FaSpSm) *a:* First of three courses in CTR, a discipline that fosters multidirectional integration of basic, patient-oriented and population-based research with the long-term goal of improving public health. *Recommended preparation:* PM 510. *b:* Analysis and interpretation of data to test clinical translational hypotheses. *c:* Multidisciplinary approach to clinical and translational research.

PM 690abcdz Directed Research in Health Behavior (2-2-2-2-0, FaSpSm) Independent research at an advanced level on a problem in the field of Health Behavior. Graded CR/NC. *Recommended preparation:* PM 604.

PM 756 Research Seminar in Health Behavior (1, max 6, FaSp) Short seminar presentations and discussions on issues accompanying the development of the field of health behavior and implementation of research in this field. Graded CR/NC.

PM 790 Research (1-12, FaSpSm) Research applicable to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PM 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC.



As the longest-standing cultural institution in Los Angeles, the USC Thornton School of Music educates students in a real-world context through collaborations with the Los Angeles Philharmonic, Los Angeles Opera, Grammy Foundation and others. USC Thornton students take advantage of the opportunity to study, perform and network in Los Angeles, the world's most vibrant music industry hub.

Since its founding in 1884, the USC Thornton School of Music has become the center of higher education in music in the western United States and ranks among the top schools of music in the nation. Situated in the heart of the vital musical life of Los Angeles, USC Thornton brings together a distinguished faculty and gifted students from around the world. It is in this wonderfully diverse cultural milieu that students are offered instruction in virtually all professional and scholarly branches of music, including instrumental and vocal performance, jazz, popular music performance, early music, conducting, composition, film scoring, music industry, musicology, music education, arts leadership, pedagogy, choral and sacred music, conducting and opera. In addition to its major programs, USC Thornton also offers a wide array of music minors and general interest courses for students majoring in other disciplines.

The USC Thornton Symphony, Chamber Choir, Concert Choir, Opera, Wind Ensemble, Popular Music Ensembles, Songwriter Showcases, Jazz Orchestra, Contemporary Music Ensemble, Early Music Ensemble and a wide variety of large and small choral and instrumental ensembles assure students the broadest performing experience. More than 500 formal and informal concerts and recitals are presented on campus each year and the school regularly presents eminent visiting artists and scholars in master classes, workshops, lectures, seminars and in performance.

Los Angeles is the home of numerous musical organizations whose performances contribute immeasurably to the cultural life of the region, and also the home of the nation's major recording, radio, film and television industries. All offer abundant opportunities to the serious young musician.

Music Student Affairs

The Music Complex Building 200

(213) 740-4721

FAX: (213) 740-5950

Email: studentaffairs@thornton.usc.edu

Director: Debra Penberthy

Music Admissions

The Music Complex Building 200

(213) 740-8986

FAX: (213) 740-8995

Email: uscmusic@thornton.usc.edu

Director: P J Woolston

Doctoral Programs

Music Faculty Building 415

(213) 740-2774

FAX: (213) 740-2714

Email: dhuffman@thornton.usc.edu

Associate Dean: Debora Huffman

Arts Leadership

Director: Kenneth Foster

Choral Music

Music Faculty Building 416

(213) 740-7418

Chair: Jo-Michael Scheibe

Classical Guitar

The Music Complex Building 115

(213) 740-7399

Chair: Brian Head

Composition

Music Faculty Building 416

(213) 740-7416

Chair: Donald Crockett

Conducting

Music Faculty Building 308

(213) 740-7416

Chair: Larry Livingston

Jazz Studies

The Music Complex Building 115

(213) 740-3119

Chair: Bob Mintzer

Keyboard Studies

Ramo Hall of Music 112

(213) 740-7703

Chair: Alan Smith

Musicology

Music Faculty Building 308

(213) 740-3211

Chair: Joanna Demers

Music Education

Music Faculty Building 416

(213) 740-3211

Chair: Susan Helfter

Music Industry

The Music Complex Building 117

(213) 740-3224

Email: scmusind@usc.edu

Chairs: Ken Lopez (*Industry*); Richard Schmunk (*Technology*)

Music Technology

The Music Complex Building G110

(213) 821-4152

Director: Brian Shepard

Organ

Ramo Hall of Music 112

(213) 740-7703

Director: Ladd Thomas

Popular Music Performance

The Music Complex Building 117

(213) 740-3244

Chair: Patrice Rushen

Strings

Ramo Hall of Music 112

(213) 740-7703

Chair: Midori Goto

Studio Guitar

The Music Complex Building 115

(213) 740-7399

Chair: Frank Potenza

Vocal Arts

Ramo Hall of Music 112

(213) 740-7704

Chair: Ken Cazan

Winds and Percussion

Music Faculty Building 308

(213) 740-7416

Chair: Terry Cravens

Keyboard Collaborative Arts

Ramo Hall of Music 112

(213) 740-7703

Director: Alan Smith

Scoring for Motion Pictures and Television

The Music Complex Building 118

(213) 821-4192

Email: smptv@usc.edu

Director: Daniel Carlin

All departments may be reached by writing to:

USC Thornton School of Music

Music Faculty Building

Los Angeles, CA 90089-0851

FAX: (213) 740-3217

email: uscmusic@usc.edu

usc.edu/music

Administration

Robert A. Cutietta, D.Ed., *Dean*

Lucinda Carver, DMA, *Vice Dean, Division of Classical Performance Studies*

Christopher Sampson, M.M., *Vice Dean, Division of Contemporary Music*

Jeffrey de Caen, MBA, *Associate Dean for Operations*

Debora L. Huffman, Ed.D., *Associate Dean for Doctoral Programs*

Susan Miltner Lopez, MBA, *Associate Dean for Administration and Finance*

A. Phoenix Delgado, M.M., *Assistant Dean for Advancement*

Brian Head, M.M., *Assistant Dean for Academic Programs*

Phillip Placenti, Ed.D., *Assistant Dean for Admission and Student Affairs*

Faculty

Jascha Heifetz Chair in Music and Distinguished Professor of Strings: Midori Goto, M.A.*

Robert Mann Endowed Chair in Strings and Chamber Music: Glenn Dicterow, B.A.

Bowen H. "Buzz" McCoy and Barbara M. McCoy Endowed Chair in Jazz at the Flora L. Thornton School of Music, Honoring President Steven B. Sample, 10th President of the University of Southern California: Bob Mintzer, B.A.*

Gregor Piatigorsky Chair in Violoncello: Ralph Kirshbaum, B.A.

H. Robert Reynolds Chair in Wind Conducting: H. Robert Reynolds, M.M.

Alice and Eleonore Schoenfeld Endowed Chair in String Instruction: Alice Schoenfeld, Dipl.*

Stephen Crocker Professor of Music: Rod Gilfry, M.M.

Judge Widney Professor of Poetry and Public Culture: Dana Gioia, M.A., MBA

Distinguished Professor of Composition: Morten Lauridsen, DMA*

Distinguished Professor of Composition: Stephen Hartke, Ph.D.*

Professors: Arthur C. Bartner, Ed.D.*; Bruce Brown, Ph.D.*; Terry Cravens, DMA*; Donald Crockett, Ph.D.*; Robert A. Cutietta, D.Ed.; Kevin Fitz-Gerald, Art. Dipl.; Gary Glaze, M.M.*; Stewart Gordon, DMA*; Norman Krieger, Dipl.*; Frederick Lesemann, DMA*; Larry Livingston, M.M.; Thom Mason, DMA*; Ronald McCurdy, Ph.D.; Richard McIlvery, M.M.; Donald McInnes, M.M.; Erica Muhl, DMA*; Tim Page, B.A.; Alan Pasqua, B.M.*; John Perry, M.M.*; Daniel Pollack, M.S.*; Frank Potenza, M.M.*; Jo-Michael Scheibe, DMA; Bryan Simms, Ph.D.*; Alan Smith, DMA*; Richard Smith, M.M.; John Thomas, M.M.; Ladd Thomas, D.Mus.; Frank Ticheli, DMA*

Associate Professors: Ken Cazan, BFA*; Joanna Demers, Ph.D.; Yehuda Gilad, Dipl.*; Adam Gilbert, Ph.D.; Rod Gilfry, M.M.; Elizabeth Hynes, B.M.; Robert Moore, Ph.D.; Cynthia Munzer, B.M.

Assistant Professors: Cristian Grases, DMA; Beatriz Ilari, Ph.D.; David Moore, B.M.; Mina Yang, Ph.D.

Professors of Practice: Daniel Carlin, M.M.; Peter Erskine; Boyde Hood, M.M.; Joel Timm, DMA; James Walker, B.M.E.

Associate Professors of Practice: Bernadene Blaha, M.M.; Lucinda Carver, DMA*; Kenneth Foster, M.A.; Mark Goldstein, J.D.; Henry Gronnier, Art. Dipl.; Brian Head, M.M.*; Ken Lopez, B.A.; Brent McMunn, M.M.; Richard Schmunk, DMA; Brian Shepard, DMA; Nick Strimple, DMA; Scott Tennant, M.M.; John Whitener, DMA

Assistant Professors of Practice: Steven Cunningham, B.S.; Andrew Garver, B.S.*; Rotem Gilbert, DMA*; Susan Helfter, DMA*; William Kanengiser, M.M.*; Veronika Krausas, DMA; Sharon Lavery, M.M.; Kristy Morrell, DMA*; Antoinette Perry, M.M.; Christopher Sampson, M.M.; Nick Stoubis, M.M.; Lisa Sylvester, DMA

Senior Lecturers (Full-time): William Biersach; Patrick Kelley; Christopher Roze; Stephen Trovato; Paul Young

Adjunct Professors: Donald Brinegar; Bruce Broughton; Martin Chalifour; Suzi Digby; Lamont Dozier; Donald Green; Melissa Manchester; Norman Pearson; H. Robert Reynolds; Cherry Rhodes; Pepe Romero; Patrice Rushen; Carl St. Clair; James Self; Jack Smalley; Allan Vogel; William Watrous; Suli Xue; Michele Zukovsky

Adjunct Associate Professors: Karen Dreyfus; Judith Farmer; David Howard; Andrew Shulman; Jo Ann Turovsky; David Weiss

Adjunct Assistant Professors: Jeffrey Allen; David Arnay; James Babor; Margaret Batjer; Jon Burlingame; Leon Ndugu Chanler; Che-Yen Chen; Neal Desby; Susan Feldman; Russell Ferrante; Parmer Fuller; Adam Kofler; Shigemi Matsumoto; Janice McVeigh; Vincent Mendoza; Leah Morrison; Darek Oleszkiewicz; Joseph Pereira; Aaron Serfaty; Robert Sheppard; Andrea Stolpe; Peter Webster; Mark Weiser; Gary Woodward; Robert Young

Adjunct Instructors: Andy Abad; Ambrose Akinmusire; Ted Ancona; Robert Anderson; Adriana Balic; Steve Becknell; Amy Bowers; Stacy Brightman; Richard Brown; Gilbert Castellanos; Paul Chaikin; Joel Clift; Christina DeMore; Sean Dougall; Barbara Dyer; Bruce Forman; Rachelle Fox; Cheryl Ann Fulton; John Fumo; Sara Gazarek; Jason Goldman; Kathleen Grace; Karin Carson; William Hollis; Sean Holt; Ben Hong; Dean Immel; Alphonso Johnson; Aron Kallay; Dax Kimbrough; Patrick Kirst; Tim Kobza; Edwin Livingston; Mary Mattei; Roy McCurdy; Shawn Mouser; Sung-Hwa Park; David Poe; Mark Popeney; Michael Powers; Otmaro Ruiz; John Schmidt; Gary Schyman; Paul Sherman; Scott Shubeck; William Skeen; Lisa Smith; Douglas Tornquist; Tina Vartanian; Carl Verheyen; Bing Wang; David Wilkinson; Tien-Hsin Wu; Shanon Zusman

Emeritus Professors: Nancy Bricard, M.M.*; William Dehning, DMA*; James Hopkins, Ph.D.*; Arend Koole,

D.Litt. et Phil.; William A. Schaefer, M.A.; Margaret Schaper, M.M.*; Alice Schoenfeld*; William Thomson, Ph.D.; James Vail, DMA*

**Recipient of university-wide or school teaching award.*

Degree Programs

The Thornton School of Music offers professional and academic degrees at the bachelor's, master's and doctoral levels. These degrees are summarized below.

Bachelor of Music: Students working toward this professional degree have a wide choice of specializations: composition, music industry, instrumental performance, jazz studies, popular music performance and vocal arts. Students can take either a single major program or double majors in several combinations such as piano and composition, string, or percussion instrument. The two majors must be offered by different departments but lead to the same degree (for example, Bachelor of Music). Double majors consisting of two majors in the same department are not permitted. The degree is granted by the Thornton School of Music.

Bachelor of Arts: These degrees are for students with a strong music background who wish to combine professional music training with substantial study in other disciplines.

Bachelor of Science: Offered by the Thornton School of Music in the specialized area of music industry.

Minors in Music: Seven different minors in music are offered, each approaching the discipline from a unique perspective and with a distinct curriculum: Jazz Studies, Musical Studies (Performance), Musical Theatre, Music Industry, Music Recording, Popular Music Studies and Songwriting.

Master of Music: This is a professional degree that represents proficiency in one area of musical practice and relevant knowledge in musical literature, performance and technique. It requires a minimum of 30 graduate units, of which 15 must be at the 500 level or higher. Students complete either a thesis or recital(s) as part of the degree requirements. The degree can be earned in choral music, composition, conducting, jazz studies, music education, keyboard collaborative arts, guitar, organ, piano, voice or instrumental performance, or sacred music. The degree is granted by the Thornton School of Music.

Master of Arts: This degree, offered through the Graduate School in conjunction with the Thornton School of Music, stresses music history or early music performance, with emphasis on scholarly research.

Doctor of Musical Arts: This is a professional degree that represents the highest level of expertise in a major field of musical practice and competence in several additional areas. Students may specialize in choral music, composition, jazz studies, music education, vocal or instrumental performance, or sacred music.

Doctor of Philosophy: Offered through the Graduate School, this is an academic degree in the field of

historical musicology. A substantial background in music, research and languages is required.

Entrance to the Degree Programs

Admission to a degree program is granted through USC's admission process, described in the Admission section of this catalogue. A supplementary application form is also required for students seeking admission to the Thornton School of Music, which can be obtained from the School of Music Office of Admission.

Applicants to a program within the school are screened by appropriate faculty selection committees that hold auditions, interviews and examine supportive materials. Letters of acceptance are issued by the USC Office of Admission.

Audition

A performance audition is required of applicants to most degree and certificate programs in the Thornton School of Music. Refer to individual curriculum listings for details.

Graduate Record Examinations

Scores from the General Test of the Graduate Record Examinations (GRE) are required for application and admission to the Master of Arts, Doctor of Musical Arts and Doctor of Philosophy degrees. (The Music Subject Test is not required.) Test scores on the GRE that are more than five years old at the time of application are not accepted.

Placement Tests

Undergraduate transfer students who have had formal study in any of the following areas must take the appropriate placement examination prior to their first registration: aural skills, theory, music history, conducting, analysis, orchestration and performance. The results of these examinations determine placement in appropriate sequential courses.

Admission to Graduate Standing

Achievement tests in basic musical skills and areas of study (Music Graduate Entrance Examinations) are required of all entering graduate students during the first semester or summer session in residence. If all examinations are not passed by the end of two semesters of course work, then further registration must include remedial courses in all areas where deficiencies exist. In degree programs in which one recital is required, all entrance examinations must be passed or corresponding remedial course work completed with a minimum grade of B- before permission to present a graduate recital is given. In programs with two or more recitals, only the first may be given prior to passing all entrance examinations or completing corresponding remedial courses.

Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS)

All applicants whose native language is not English are required to submit scores from the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS). Test scores that are more than two years old at the time of application are not accepted.

Advanced Standing Credit for Music Taken in Accredited Schools of Music

Music courses completed with satisfactory grades in a member institution of the National Association of Schools of Music are acceptable for transfer. The university reserves the right, however, to require a student to take a placement test (at no cost) to determine the level of achievement in any given aspect of music, and to review the student's credentials at the end of one semester at USC to determine what credit will in fact be transferred.

Advanced Standing Credit for Music Not Taken in Accredited Schools of Music

Students who wish credit for music taken in institutions not accredited by the National Association of Schools of Music must provide the Office of Admission with information on their prior work, showing the subjects studied, the number of lessons in each subject, the length of each lesson, number of years of study and the names of instructors. Such special requests are dealt with on an individual basis. Examinations or continuation work or both may be required before credit allowance is considered.

General Requirements

All curricula leading to the Bachelor of Music, Master of Music and Doctor of Musical Arts degrees require proficiency in performance. This is accomplished by individual instruction in the areas best suited to the student's ability and interests.

Proficiency in piano is required in all curricula and may be achieved through class and/or individual instruction. Some curricula require competency in one additional performance medium.

Undergraduate Degrees

Bachelor of Music

The Bachelor of Music (B.M.) is a professional degree granted by the Thornton School of Music. The various majors for the degree are listed subsequently along with special requirements for each.

Individual Instruction in Residence

Candidates for the B.M. degree in performance must complete a minimum of three semesters of individual instruction in their major field while in residence.

Senior Recital

All performance majors must present a senior recital consisting of a memorized program one hour long (except in the case of certain wind instruments) in partial fulfillment of the degree requirements. Composition majors present a full-length recital of their original compositions. A candidate's program must be ready for presentation before a faculty committee at least one month before the required public recital. Complete details are available from the Music Operations Office, Thornton School of Music.

General Education Requirements

The university's general education program provides a coherent, integrated introduction to the breadth of

Attendance at recitals in the field of the student's major is a regular part of the work in applied music for all music majors. Attendance at recitals is recommended for non-music majors who take individual instruction as an elective.

Curriculum Requirements

The curriculum requirements for each major are listed under each degree. The USC course classification and numbering system is explained on page 32xx. In addition, music courses sometimes carry the following abbreviations: CD = Conducting; CG = Classical Guitar; HC = Harpsichord; OR = Organ; P = Piano; SG = Studio Guitar; VA = Viola; VC = Voice Coaching; VO = Voice.

Change of Curriculum

To change from one curriculum to another, a student must obtain written approval of all of the following: the department chair in the curriculum which the student is leaving, the department chair for the new curriculum and the dean of the Thornton School of Music.

Non-Degree Programs

Students who have highly specialized interests which may not be met through degree programs may apply for admission to one of the following non-degree programs.

Artist Diploma Program

This program is designed for young artists of exceptional ability and musical sensitivity who plan careers as solo performers. The Artist Diploma Program provides young artists the opportunity to devote their full time to concentrated study and practice for the duration of their assigned programs. This program typically requires two to three consecutive years of study for completion.

knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. This program requires six courses in different categories, plus writing and diversity requirements.

The provost has allowed an exception to the rules governing the new general education requirements for certain groups of students pursuing performance degrees in music. Students pursuing the Bachelor of Music in Jazz Studies or the Bachelor of Music in Performance (in all tracks except organ) may satisfy their social issues and first writing requirement separately by taking WRIT 130 (instead of WRIT 140) in the spring of their freshman year. In addition those pursuing the Bachelor of Music in Performance (vocal arts) may satisfy Category I of the new program with MUHL 331 and MUHL 332.

In all other respects, students in the Thornton School of Music must satisfy the general education requirements as described on pages 63xx and 250xx.

Individual Instruction Limitations

Music majors may accumulate a maximum of 16 units of individual instruction at the 300 level toward an undergraduate degree program.

Graduate Certificate in Arts Leadership

The graduate program in arts leadership is a two-semester certificate program for artists, arts administrators and cultural workers of all types to develop the skills necessary to become successful leaders in the arts and arts organizations in a rapidly changing and radically altered contemporary world.

Graduate Certificate Program in Performance

This two-year graduate-level program is designed for students who have completed their undergraduate education in music, or its equivalent, and intend to concentrate their energies on the full-time development of their discipline.

Graduate Certificate Program in Scoring for Motion Pictures and Television

This one-year program is designed for students who hold the Bachelor of Music in Composition or its equivalent. Students in this program must maintain a 3.0 grade point average, with no course grade lower than a C (2.0). Work graded C- or below is not acceptable for credit toward the certificate.

Honor Society

Pi Kappa Lambda

Pi Kappa Lambda is a national honor society established in 1918 for the promotion and recognition of scholarship and performance in music. Students of the School of Music are eligible for election to Eta chapter at the University of Southern California, established in 1923.

Bachelor of Music in Composition

Entrance Requirements

Applicants must submit the Thornton School of Music Supplementary Application, a statement of objectives, resume, complete academic transcripts, three original compositions, and a complete list of all original compositions including dates and media. If available, audio recordings of the submitted scores should also be included. An on-campus interview with the composition faculty is encouraged but not required. Admission to the B.M. in Composition is highly competitive. The program is a four-year program, to which transfer students are rarely admitted. Admission to programs in composition is limited to fall semester only.

CURRICULUM REQUIREMENTS	UNITS
General education	6 courses
Writing	2 courses
Large ensemble*	4
Ensemble electives	2
MPKS 250ab (4), MPKS 350ab (4), MPKS 301P (4)**	12
MTEC 474a or MTEC 474b or MTEC 490	2

MUCO 132ab (4), MUCO 133ab (6), MUCO 135 (2), MUCO 137ab (4), MUCO 232ab (4), MUCO 233ab (6), MUCO 235 (2), MUCO 236 (2), MUCO 237ab (8), MUCO 336ab (4), MUCO 337ab (8), MUCO 434 (2), MUCO 435 (2), MUCO 437ab (4)	58
MUCD 340 (2), MUCD 343 (2)	4
MUHL 231 (3), MUHL 232 (3), MUHL 331 (3), MUHL 332 (3)	12
Electives in music	2
General electives	4
Senior recital	0
Total required for degree	132

**Transfer credit may not fulfill the large ensemble requirement.*

***Requirement may be fulfilled with MPKS 301P if proficiency level equivalent to MPKS 350B is demonstrated by examination.*

In addition to the above curricular requirements, B.M. candidates in composition must take departmental comprehensive examinations in all six areas:

- (1) instrumental performance at an intermediate level;
- (2) theory and analysis;
- (3) aural skills;
- (4) instrumentation;
- (5) music literature;
- (6) elementary score-reading.

Students must pass in at least four areas to continue on to the senior year of the major and, in order to graduate, must pass in all six areas.

Bachelor of Music in Jazz Studies

Entrance Requirements

Applicants must submit the Thornton School of Music Supplementary Application, a statement of objectives, resume and repertoire list. A performance audition is required for admission to this program. Specific audition requirements, along with other entrance requirements, are reviewed on an annual basis and published in the Application Requirements section online at usc.edu/music. Most applicants will also be asked to sit for a written examination consisting of listening to excerpts, basic jazz theory and jazz history. Though applicants are strongly encouraged to perform a live audition, a recent video recording may be submitted in lieu of a live audition if necessary.

CURRICULUM REQUIREMENTS	UNITS
General education	6 courses
Writing	2 courses
MUEN 332 (8), MUEN 329 (6)	14
MUJZ 195L (8), MUJZ 395L (8)	16
MUCO 132ab (4), MUCO 133ab (6), MUJZ 141ab (4), MUJZ 305ab (4)	18
MUSC 496 (2)	2
Two courses from: MUHL 231 (3), MUHL 232 (3), or MUHL 331 (3)	6
MUJZ 153 (4), MUJZ 253 (4), MUJZ 286ab (6), MUJZ 353 (4), MUJZ 400 (2), MUJZ 443 (2), MUJZ 453 (4)	26
Electives	18
Comprehensive exam*	0

Senior recital	0
Total required for degree	132
<i>*Students must pass a comprehensive performance exam prior to the senior recital, which entails performance and improvisation, from memory, of songs selected from the "Jazz Studies Department Required Tune List."</i>	

Bachelor of Music in Performance (Classical Guitar)

Entrance Requirements

Applicants must submit the Thornton School of Music Supplementary Application, a statement of objectives, resume and repertoire list. A performance audition is required for admission to this program. Specific audition requirements, along with other entrance requirements, are reviewed on an annual basis and published in the Application Requirements section online at usc.edu/music. A recent high-fidelity recording may be submitted in lieu of a live audition if necessary.

CURRICULUM REQUIREMENTS	UNITS
General education	6 courses
Writing	2 courses
MPGU 153CG (4), MPGU 253CG (4), MPGU 353CG (4), MPGU 453CG (4), MPGU 159 (2), MPGU 257 (8), MPGU 259 (2), MPGU 357 (2), MPGU 457 (6), MPGU 417 (2), MPGU 426 (3), MPGU 427 (3), MPGU 459 (2)	46
MPKS 250ab	4
MUEN 326 (6)	6
Large ensemble*	2
Ensemble electives	2
MUCD 340 (2) or MUCD 343 (2)	2
MUCO 132ab (4), MUCO 133ab (6), MUCO 232ab (4), MUCO 233ab (6), MUCO 338x (2)	22
MUHL 231 (3), MUHL 232 (3), MUHL 331 (3), MUHL 332 (3)	12
Electives	4
Junior recital	0
Senior recital	0
Total required for degree	132

**Transfer credit may not fulfill the large ensemble requirement.*

Bachelor of Music in Performance (Studio Guitar)

Entrance Requirements

Applicants must submit the Thornton School of Music Supplementary Application, a statement of objectives, resume and repertoire list. A performance audition is required for admission to this program. Specific audition requirements, along with other entrance requirements, are reviewed on an annual basis and published in the Application Requirements section of the Thornton Website (usc.edu/music). A recent, high-fidelity recording may be submitted in lieu of a live audition if necessary.

CURRICULUM REQUIREMENTS	UNITS
General education	6 courses
Writing	2 courses

Common core:	
MUCD 343	2
MPGU 153SG (4), MPGU 253SG (4), MPGU 353SG (4), MPGU 453SG (4), MPGU 158 (2), MPGU 159 (2), MPGU 258 (4), MPGU 358 (4), MPGU 415 (2), MPGU 416 (3), MPGU 426 (3), MPGU 428ab (6), MPGU 458 (2)	44

Traditional emphasis:

MPKS 250ab (4) MUCO 132ab (4), MUCO 133ab (6), MUCO 232ab (4), MUCO 233ab (6), MUCO 338x (2), MUEN 326 (6), MUHL 231 (3), MUHL 232 (3), MUHL 331 (3), MUHL 332 (3), Ensemble electives (4), Electives (6)	54
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Jazz emphasis:

MTEC 310, MUCO 132ab (4), MUCO 133ab (6), MUJZ 141ab (4), MUJZ 305ab (4), or MUCO 338x (2), MUJZ 286ab (6), 6 units chosen from MUHL 231, MUHL 232, MUHL 331 (6), MUEN 326 (6), MPGU 301 (2), Ensemble electives (4), Electives (10)	54
Junior recital	0
Senior recital	0
Total required for degree	132

Bachelor of Music in Performance (Piano)

Entrance Requirements for Piano Major

Applicants in piano must submit the Thornton School of Music Supplementary Application, a statement of objectives, resume and repertoire list. A performance audition is also required. Current requirements for the audition may be found at usc.edu/music. Follow the links to the Keyboard Studies Department and choose "Application Requirements." Although live auditions are strongly encouraged, a recent, high-fidelity audio or CD recording may be submitted in lieu of a live audition if necessary by applicants living a distance greater than 200 miles from the USC campus.

CURRICULUM REQUIREMENTS FOR PIANO	UNITS
General education	6 courses
Writing	2 courses
MPKS 153P (4), MPKS 253P (4), MPKS 353P (4), MPKS 453P (4), MPKS 160ab (4), MPKS 170ab (2), MPKS 228 (2), MPKS 260ab (4), MPKS 360ab (4), MPKS 431ab (4), MPKS 472ab (4), MPKS 481 (2)	42
MUCD 340 (2) or MUCD 343 (2)	2
MUCO 132ab (4), MUCO 133ab (6), MUCO 232ab (4), MUCO 233ab (6), MUCO 338x (2)	22
MUEN 328 (4)	4
Large ensemble*	4
MUHL 231 (3), MUHL 232 (3), MUHL 331 (3), MUHL 332 (3)	12
Electives	14
Senior recital	0
Total required for degree	132
<i>*Transfer credit may not fulfill the large ensemble requirement.</i>	

Bachelor of Music in Performance (Organ)**Entrance Requirements**

Applicants must submit the Thornton School of Music Supplementary Application, a statement of objectives, resume and repertoire list. A performance audition is required for admission to this program. Specific audition requirements, along with other entrance requirements, are reviewed on an annual basis and published in the Application Requirements section online at usc.edu/music.

CURRICULUM REQUIREMENTS	UNITS
General education	6 courses
Writing	2 courses
MPKS 153OR (4), MPKS 253OR (4), MPKS 353OR (4), MPKS 453OR (4), MPKS 160ab (4), MPKS 260ab (4)	24
MUCO 132ab (4), MUCO 133ab (6), MUCO 232ab (4), MUCO 233ab (6), MUCO 338x (2)	22
MUCD 340 (2), MUCD 343 (2)	4
Large ensemble*	4
Ensemble electives	2
MUHL 231 (3), MUHL 232 (3), MUHL 331 (3), MUHL 332 (3)	12
Electives in music	21
Electives	11
Senior recital	0
Total required for degree	132

*Transfer credit may not fulfill the large ensemble requirement.

Bachelor of Music in Performance (Violin), (Viola), (Violoncello), (Double Bass) or (Harp)**Entrance Requirements (Violin), (Viola), (Violoncello), (Double Bass) or (Harp)**

Applicants must submit the Thornton School of Music Supplementary Application, a statement of objectives, resume and repertoire list. A performance audition is required for admission to this program. Specific audition requirements, along with other entrance requirements, are reviewed on an annual basis and published in the Application Requirements section online at usc.edu/music. A recent video recording may be submitted in lieu of a live audition if necessary.

CURRICULUM REQUIREMENTS FOR VIOLIN, VIOLA AND VIOLONCELLO MAJORS	UNITS
General education	6 courses
Writing	2 courses
Foreign language	2 courses
MPKS 250ab (4), MPKS 350ab (4), MPKS 481 (2)	10
MPST 153 (4), MPST 253 (4), MPST 353 (4), MPST 453 (4), MPST 471ab (4), MPST 472 (4)	24
MUCD 343	2
MUCO 132ab (4), MUCO 133ab (6), MUCO 232ab (4), MUCO 233ab (6), MUCO 338x (2)	22
MUEN 327 (8)	8
Large ensemble*	8
MUHL 231 (3), MUHL 232 (3), MUHL 331 (3), MUHL 332 (3)	12
Electives**	6

Junior recital	0
Senior recital	0
Total required for degree	132
<i>*Required each semester in residence.</i>	
<i>**Violin majors are required to take MPST 301VL (2) as 2 units of the 6-unit elective requirement.</i>	

CURRICULUM REQUIREMENTS FOR DOUBLE BASS MAJORS	UNITS
General education	6 courses
Writing	2 courses
Foreign language	2 courses
MPKS 250ab (4), MPKS 350ab (4), MPKS 481 (2)	10
MPST 153 (4), MPST 253 (4), MPST 353 (4), MPST 453 (4), MPST 262 (4), MPST 462 (4), MPST 472 (4)	28
MUCO 132ab (4), MUCO 133ab (6), MUCO 232ab (4), MUCO 233ab (6), MUCO 338x (2)	22
MUCD 343 (2)	2
MUEN 327 (4)	4
Large ensemble*	8
MUHL 231 (3), MUHL 232 (3), MUHL 331 (3), MUHL 332 (3)	12
Electives	6
Junior recital	0
Senior recital	0
Total required for degree	132

CURRICULUM REQUIREMENTS FOR HARP MAJORS	UNITS
General education	6 courses
Writing	2 courses
Foreign language	2 courses
MPKS 250ab (4), MPKS 350ab (4), MPKS 481 (2)	10
MPST 153 (4), MPST 253 (4), MPST 353 (4), MPST 453 (4), MPST 263 (4), MPST 463 (4)	24
MUCD 343	2
MUCO 132ab (4), MUCO 133ab (6), MUCO 232ab (4), MUCO 233ab (6), MUCO 338x (2)	22
MUEN 327 (8)	8
Large ensemble*	8
MUHL 231 (3), MUHL 232 (3), MUHL 331 (3), MUHL 332 (3)	12
Electives	6
Junior recital	0
Senior recital	0
Total required for degree	132

*Required each semester in residence.

Bachelor of Music in Performance (Vocal Arts)**Entrance Requirements**

Applicants must submit the Thornton School of Music Supplementary Application, a statement of objectives, resume and repertoire list. A performance audition is required for admission to this program. Specific audition requirements, along with other entrance requirements, are reviewed on an annual basis and published in the Application Requirements section online at usc.edu/music. A recent video recording may be submitted in lieu of a live audition if necessary.

CURRICULUM REQUIREMENTS	UNITS
General education	6 courses
Writing	2 courses
Foreign language	4 courses
FREN 120 (4), GERM 101 (4), ITAL 120 (4); FREN 150 (4) or GERM 102 (4) or ITAL 150 (4)	
MPKS 250ab (4), MPKS 350ab (4)	8
MPVA 153VO (4), MPVA 203ab (4), MPVA 253VO (4), MPVA 301VC (3), MPVA 353VO (4), MPVA 453VO (4), MPVA 404 (2), MPVA 438 (2), MPVA 439 (2), MPVA 440 (2), MPVA 441 (2), MPVA 479 (4)	37
MUCD 340	2
MUCO 132ab (4), MUCO 133ab (6), MUCO 232ab (4), MUCO 233ab (6)	20
Large ensemble*	4
Ensemble electives	2
MUHL 231 (3), MUHL 232 (3), MUHL 331 (3), MUHL 332 (3)	12
Electives	3
Junior recital	0
Senior recital	0
Total required for degree	132

*Transfer credit may not fulfill the large ensemble requirement.

Bachelor of Music in Performance (Flute), (Oboe), (Clarinet), (Bassoon), (Saxophone), (French Horn), (Trumpet), (Trombone), (Tuba) or (Percussion)**Entrance Requirements**

Applicants must submit the Thornton School of Music Supplementary Application, a statement of objectives, resume and repertoire list. A performance audition is required for admission to this program. Specific audition requirements, along with other entrance requirements, are reviewed on an annual basis and published in the Application Requirements section online at usc.edu/music. A recent, high-fidelity recording may be submitted in lieu of a live audition if necessary.

CURRICULUM REQUIREMENTS	UNITS
General education	6 courses
Writing	2 courses
MPKS 250ab	4
MPWP 153 (4), MPWP 253 (4), MPWP 353 (4), MPWP 453 (4), MPWP 252 (4), MPWP 452 (4)	24
MUCD 343 (2), MUCD 340 (2) or MUCD 443 (2)	4
MUCO 132ab (4), MUCO 133ab (6), MUCO 232ab (4), MUCO 233ab (6), MUCO 338x (2)	22
MUEN 323 (8)*	8
MUEN 325 (8)*	8
MUHL 231 (3), MUHL 232 (3), MUHL 331 (3), MUHL 332 (3)	12
Electives	18
Senior recital	0
Total required for degree	132

*Required each semester in residence.

Bachelor of Music in Performance (Popular Music)**Entrance Requirements**

Applicants must submit the Thornton School of Music Supplementary Application, a statement of objectives, résumé and repertoire list. A performance audition is

required for admission to this program. Specific audition requirements, along with other entrance requirements, are reviewed on an annual basis and published in the Application Requirements section of the Thornton Website (usc.edu/music).

CURRICULUM REQUIREMENTS	UNITS
General Education	6 courses
Writing	2 courses
MUCO 133ab (3-3), MUCO 131ab (2-2), MUCO 132ab (2-2), MUCO 232ab (2-2), MPPM 325ab (2-2), MUSC 255 (2)	24
MUHL 315 (4) and two courses from the following: MUJZ 100 (4), MUJZ 419 (4), MUSC 400 (4), MUSC 420 (4), MUSC 422 (4), MUSC 444 (4), MUSC 450 (4), MUSC 460 (4)	12
MTEC 310 (2), MTEC 311 (2), MUIN 270 (4), MUSC 496 (2)	10
MPPM 100 (4), MPPM 120 (8), MPPM 153 (4), MPPM 240* (2), MPPM 250** (2), MPPM 253 (4), MPPM 320 (4), MPPM 450ab (1-1)	30
Ensemble	2
Electives	22
Total required for the degree	132

*Drummers will substitute a class in guitar or voice.

**Keyboardists will substitute a class in guitar or voice.

Bachelor of Music in the Music Industry

Entrance Requirements

Applicants must submit the Thornton School of Music Supplementary Application, a statement of objectives, resume and repertoire list. A performance audition according to the requirements of the department of the applicant's primary instrument or voice is also required.

CURRICULUM REQUIREMENTS	UNITS
General education	6 courses
Writing	2 courses
MPxx 153 (4), MPxx 253 (4), MPxx 353 (4) Individual instruction in primary instrument/voice*	12
MPKS 250ab	4
MUCD 340 (2) or MUCD 343 (2)	2
Ensemble electives	2
MUCO 132ab (4), MUCO 133ab (6), MUCO 232ab (4), MUCO 233ab (6)	20
MUHL 231 (3), MUHL 232 (3), MUHL 331 (3), MUHL 332 (3)	12
MUIN 270 (4), MUIN 280 (4), MUIN 360 (4), MUIN 450 (8)	20
Two courses from the following: MUIN 370 (4), MUIN 385 (4), MUIN 425 (4), MUIN 430 (4), MUIN 435 (4), MUIN 440 (4), MUIN 443 (4), MUIN 445 (4), MUIN 495 (4)	8
Music Technology requirements: MUIN 275ab (8) and 6 units from the following: MUIN 287 (2), MUIN 340 (4), MUIN 389 (2), MUIN 392ab (2-2), MUIN 442 (2), MUIN 446ab (2-2), MUIN 476ab (2-2), MUIN 477 (2), MUIN 478 (4), MUIN 479 (2), MUIN 494 (4), MUIN 496 (4)	14

Electives	6
Junior recital	0
	132

*All individual instruction units must be taken in the same area in which the students auditioned.

Bachelor of Science in the Music Industry

The Bachelor of Science in the Music Industry is a professional degree that prepares students to enter a variety of careers in the music industry of today. Students must fulfill a series of core requirements for the degree, but they are allowed to choose one of two options for the remainder of their curriculum. The industry option emphasizes classes in the business and legal aspects of the music industry, while the technology option allows students to gain a solid background in the various uses of technology in the modern music industry.

Entrance Requirements

Applicants must submit the Thornton School of Music Supplementary Application, a statement of objectives, resume and full academic transcripts. A full academic review will be the primary consideration for admission to this program. In some cases, a phone or in-person interview will be requested by the Thornton admission office.

General Education Requirements

The university's general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. This program requires six courses in different categories, plus writing and diversity requirements, which comprise the USC Core. See pages 63xx and 250xx for more information.

Business-related Requirements

In addition to the above general education requirements, the following courses offered through the USC Marshall School of Business, the USC Leventhal School of Accounting and the USC Dornsife College of Letters, Arts and Sciences are required.

ECON 203	1 course
ECON 205	1 course
BUAD 307	1 course
ACCT 410x	1 course
	4 courses

CORE CURRICULUM REQUIREMENTS	UNITS
General education requirements	6 courses
Writing	2 courses
Business-related requirements	4 courses
School of Music requirements: One course from the following: MUHL 315x (4), MUSC 444 (4), MUSC 450 (4), MUSC 460 (4)	4
MUIN 270 (4), MUIN 275ab (4-4), MUIN 280 (4), MUIN 360 (4), MUIN 450 (8)	28
MPKS 150ab (2-2)	4
MUCO 101x (2)	2
Total core units:	86

INDUSTRY OPTION (42 UNITS)	UNITS
BUAD 215x	4
Four courses from the following: MUIN 370 (4), MUIN 385 (4), MUIN 425 (4), MUIN 430 (4), MUIN 435 (4), MUIN 440 (4), MUIN 443 (4), MUIN 445 (4), MUIN 495 (4), MUIN 496 (4)	16
6 units from the following: MTEC 448 (2), MTEC 474ax (2), MUIN 287 (2), MUIN 305 (4), MUIN 340 (4), MUIN 389 (2), MUIN 392ab (2-2), MUIN 442 (2), MUIN 446ab (2-2), MUIN 476ab (2-2), MUIN 477 (2), MUIN 478 (2), MUIN 479 (2), MUIN 493 (2)	6
Electives	16
Total:	128

TECHNOLOGY OPTION (42 UNITS)	UNITS
MUIN 305 (4), MUIN 446ab (2-2)	8
Three courses from the following: MUIN 370 (4), MUIN 385 (4), MUIN 425 (4), MUIN 430 (4), MUIN 435 (4), MUIN 440 (4), MUIN 443 (4), MUIN 445 (4), MUIN 495 (4), MUIN 496 (4)	12
12 units from the following: MTEC 448 (2), MTEC 474ax (2), MUIN 287 (2), MUIN 340 (4), MUIN 389 (2), MUIN 392ab (2-2), MUIN 442 (2), MUIN 476ab (2-2), MUIN 477 (2), MUIN 478 (2), MUIN 479 (2), MUIN 493 (2)	12
Electives	10
Total:	128

Bachelor of Arts in Music

Applicants must submit the Thornton School of Music Supplementary Application, a statement of objectives, resume and repertoire list. A performance audition according to the requirements of the department of the applicant's primary instrument or voice is also required.

General Education Requirements

The university's general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. This program requires six courses in different categories, plus writing, foreign language and diversity requirements, which together comprise the USC Core. See pages 63xx and 250xx for more information.

Curriculum Requirements

REQUIRED COURSES	UNITS
General education, writing, foreign language, and electives	64
<i>Lower division</i>	
MPKS 250ab	4
MUCO 132ab (2-2), MUCO 133ab (3-3), MUCO 232ab (2-2), MUCO 233ab (3-3)	20
MUHL 231 (3), MUHL 232 (3)	6
<i>Upper division</i>	
Ensemble electives	4
Individual instruction 301	6

MUCO 338x	2
MUHL 331 (3), MUHL 332 (3)	6
Music electives	16
Total required for degree	128

Curriculum Areas of Study

Within the curriculum for the B.A., students may wish to focus in a particular area of music that suits their interest and the faculty's expertise. Students may specialize in one area or may design individual programs of study by choosing various combinations of electives that best meet their needs and career objectives. Relevant courses for each area are posted at usc.edu/music. One such option is listed below.

Vocal Jazz Option: This option is designed for students with a strong interest in the performance of solo and ensemble vocal jazz music. Students should take two semesters of Vocal Jazz Techniques, as well as individual instruction in jazz voice. Students may also perform in vocal ensembles and with instrumental combos.

Bachelor of Arts in Choral Music

Applicants must submit the Thornton School of Music Supplementary Application, a statement of objectives, resume and repertoire list. A performance audition according to the requirements of the Choral Music department is also required.

General Education Requirements

The university's general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. This program requires six courses in different categories, plus writing, foreign language and diversity requirements, which together comprise the USC Core. See xx and xx for more information.

REQUIRED COURSES	UNITS
General education, writing, foreign language, and electives	64

Lower division

MPKS 250ab	4
MUCO 132ab (2-2), MUCO 133ab (3-3), MUCO 232ab (2-2), MUCO 233ab (3-3)	20
MUHL 231 (3), MUHL 232 (3)	6

Upper division

Ensemble (choral)	8
MPVA 301 (6), MPVA 442 (2)	8
MUCO 338x (2), MUCO 441 (2)	4
MUHL 331 (3), MUHL 332 (3)	6
MUCD 340 (2), MUCD 441 (2)	4
MUCM 320 (2), MUCM 440 (2)	4
Total:	128

Minors in Music

Minor in Music Recording

A minor in music recording is offered for undergraduate students to provide them with the background necessary to enter the field of recording engineering and to familiarize them with the design needs of recording

equipment. The minor is not available to music industry majors.

Prerequisite

Acceptance into the program might require a personal interview by the Thornton School of Music to assure that the student has sufficient musical background and skill.

Students admitted to this minor will be expected to have a minimum GPA of 2.0 and to maintain that average with no grade lower than a "C" for all courses taken in the minor.

REQUIRED COURSES		UNITS
MUIN 275ab	Recording Arts Workshop	4-4
MUIN 286	Record Production Management	2
MUIN 287	The Business and Economics of the Recording Industry	2
MUIN 446a	Computer Assisted Recording and Editing	2
10 units from the following:		
MUIN 389	Digital Equipment and Recording	2
MUIN 392a	Acoustics and Speaker Design	2
MUIN 446b	Computer Assisted Recording and Editing	2
MUIN 477	Remote Recording Techniques	2
MUIN 478	Advanced Multichannel Remix	2
MUIN 479	Audio Mastering	2
MUIN 493	Audio Signal Processing Equipment	2
		24

Minor in Music Industry

A minor in the music industry is offered for undergraduate students to provide them with the background necessary to enter varied fields in the music business and to familiarize them with standard practices and procedures. A minimum of 20 units is required for completion of this minor. The minor is not available to music industry majors.

Prerequisite

Acceptance into the program might require a personal interview by the Thornton School of Music.

Students admitted to this minor will be expected to have a minimum GPA of 2.0 and to maintain that average with no grade lower than a "C" for all courses taken in the minor.

REQUIRED COURSES		UNITS
MUIN 277x	Introduction to Music Technology	4
MUIN 372abx	Business and Legal Aspects of the Music Industry	4-4
One course from the following:		
MUHL 315x	Music and Culture	4
MUSC 420	Hip-Hop Music Culture	4
MUSC 422	The Beatles: Their Music and Their Times	4
MUSC 444	American Roots Music: History and Culture	4
MUSC 450	The Music of Black Americans	4

MUSC 460	Film Music: History and Function from 1930 to the Present	4
MUSC 465	Music, Television and American Culture	4
4 units from the following:		
MUIN 370	Distribution of Recorded Music and Music Publishing	4
MUIN 385	Radio in the Music Industry	4
MUIN 425	Live Music Production and Promotion	4
MUIN 430	Artist Management and Development	4
MUIN 435	Manufacture and Distribution of Musical Products	4
MUIN 443	The Business of Music for Visual Media	4
MUIN 446ab	Computer Assisted Recording and Editing	2-2
MUIN 495	Music Industry, Broadcast and the Internet	4
		20

Minor in Jazz Studies

This 21-unit minor program in jazz studies incorporates course work in individual instruction, the history of jazz masters, techniques of jazz improvisation and jazz theory for improvisers. The minor is not available to B.M. jazz studies majors.

Requirements for admission are: GPA per university regulations and an audition.

REQUIRED COURSES		UNITS
MUCO 130a	Basics of Music Theory	3
MUEN 329	Jazz Ensemble (1, max 8), or	
MUEN 332	Jazz Chamber (1, max 8)	4
MUJZ 150x	Beginning Jazz Improvisation	2
MUJZ 301	Individual Instruction	4
MUJZ 419	The Jazz Experience: Myths and Culture, or	
MUSC 450	The Music of Black Americans	4
MUJZ 450	Intermediate Jazz Improvisation	2
Music courses numbered 300-499		2
Total units:		21

Minor in Musical Theatre

The minor in musical theatre, interdisciplinary in nature, is a 27-unit program incorporating the study of acting, dance or movement, vocal arts and related musical subjects. Admission to the minor requires an audition for music but not for theatre.

For students majoring in theatre or another non-music discipline:

REQUIRED COURSES		UNITS
MUSC 400	The Broadway Musical: Reflection of American Diversity, Issues, and Experiences	4
MPGU 125	Beginning Fingerstyle/Chord Guitar, and	
MPGU 126	Easy Fingerstyle Beatles, or	
MPKS 150ab	Beginning Piano, or	
MUED 330x	Fundamentals of Music	4

MPVA 301	Individual Instruction (6), or	
MPVA 141	Class Voice (2), or	
MPVA 241	Intermediate Class Voice (2), and	
MPVA 301	Individual Instruction (4)	6
MPVA 402*	Musical Theatre Workshop	8

2 units to be selected from:

DANC 181–189, or		
THTR 216	Movement for Actors, or	
THTR 316	Advanced Movement for Actors	2
THTR 343	Musical Theatre Audition	3
Total units:		27

*2 units of MPVA 402 may be satisfied by taking THTR 397 Theatre Practicum I.

For students majoring in music performance (vocal arts):

REQUIRED COURSES	UNITS
MPVA 402* Musical Theatre Workshop	8
MUSC 400 The Broadway Musical: Reflection of American Diversity, Issues, and Experiences	4
THTR 101 Introduction to Acting	4
THTR 343 Musical Theatre Audition	3

2 units to be selected from:

DANC 181–189, or		
THTR 216	Movement for Actors, or	
THTR 316	Advanced Movement for Actors	2

6 units to be selected from:

THTR 252ab	Intermediate Acting I, or	
THTR 352ab	Intermediate Acting II	6
Total units:		27

*2 units of MPVA 402 may be satisfied by taking THTR 397 Theatre Practicum.

For students majoring in music (non-vocal arts performance):

REQUIRED COURSES	UNITS
MPVA 301 Individual Instruction	4
MPVA 402* Musical Theatre Workshop	8
MUSC 400 The Broadway Musical: Reflection of American Diversity, Issues, and Experiences	4
THTR 101 Introduction to Acting	4
THTR 343 Musical Theatre Audition	3

2 units to be selected from:

DANC 181–189, or		
THTR 216	Movement for Actors, or	
THTR 316	Advanced Movement for Actors	2

2 units to be selected from:

THTR 252ab	Intermediate Acting I, or	
THTR 352ab	Intermediate Acting II	2

Total units: 27
*2 units of MPVA 402 may be satisfied by taking THTR 397 Theatre Practicum I.

Minor in Musical Studies

This 26-unit program in musical studies, with an emphasis in performance, incorporates the study of music theory, music history, performance, ensembles and electives. Students may enter the program in their freshman year. An audition is required for this minor, which is not available to music majors.

REQUIRED COURSES	UNITS
MUEN 300–499	2
MUHL 315x Music and Culture	4
MPKS 250a Keyboard Instruction I	2
Individual Instruction at the 301 level	6
MUCO 130abx Basics of Music Theory	6
Music electives*	6
Total:	26

*Must include 4 upper division units.

Minor in Popular Music Studies

This minor consists of four upper division courses, to be chosen from courses that examine different aspects of popular music. The minor focuses on the study of the repertoires and their cultural and social context. Students must be in good academic standing to be admitted. No previous musical experience is required.

COURSE REQUIREMENTS	UNITS
Choose four courses (16 units) from the following:	
MUSC 400 The Broadway Musical: Reflection of American Diversity, Issues, and Experiences	4
MUSC 420 Hip-Hop Music and Culture	4
MUSC 422 The Beatles: Their Music and Their Times	4
MUSC 444 American Roots Music: History and Culture	4
MUSC 450 The Music of Black Americans	4
MUSC 460 Film Music: History and Function from 1930 to the Present	4
MUSC 465 Music, Television and American Culture	4

MUJZ 419	The Jazz Experience: Myths and Culture	4
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Minor in Songwriting

The minor in songwriting incorporates practical instruction in the craft of songwriting and in performance skills, instruction in the technology relevant to songwriting, and critical studies in the relevant repertoires.

Requirements for admission: Successful completion of MUSC 255 Songwriting I and an interview with the admission coordinator.

REQUIRED COURSES	UNITS
MTEC 310 Computer Recording for the Performing Musician	2
MTEC 311 MIDI Techniques for the Performing Musician	2
MUCO 130abx Basics of Music Theory	3-3
MUSC 255 Songwriting I	2
MUSC 355 Songwriting II	2
MUSC 455 Songwriting III: The Performing Songwriter	2

Choose one of the following courses:

COMM 306	The Communication Revolution, Entertainment and the Arts	4
COMM 307	Sound Clash: Popular Music and American Culture	4
COMM 384	Interpreting Popular Culture	4
COMM 440	Music as Communication	4

Choose one of the following courses:

MUSC 400	The Broadway Musical: Reflection of American Diversity, Issues, and Experiences	4
MUSC 420	Hip-Hop Music and Culture	4
MUSC 422	The Beatles: Their Music and Their Times	4
MUSC 444	American Roots Music: History and Culture	4
MUSC 450	The Music of Black Americans	4
MUSC 460	Film Music: History and Function from 1930 to Present	4
		24

Minor in Performing Arts Studies

The minor in performing arts provides an interdisciplinary inquiry into the nature and aesthetics of the performing arts. It combines the disciplines of cinematic arts, dance, music and theatre. The minor is a unique course of study that looks at how the performing arts contribute to a culturally literate society. See the USC School of Dramatic Arts section of this catalogue, page 943xx.

Graduate Degrees

Admission-Audition Requirements

Applicants to graduate programs in the Thornton School of Music must submit the music supplementary application in addition to fulfilling all USC graduate admission

requirements. Applicants to all doctoral programs, the M.A. in Music History and Literature and the M.A. in Early Music must also submit scores from the general test of the Graduate Record Examinations (GRE). Any applicant whose native language is not English must

also submit scores from the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS). GRE test scores that are more than five years old, and TOEFL or IELTS scores that are

more than two years old, at the time of application, will not be accepted.

Additional requirements for specific graduate programs are detailed below.

Choral Music

Applicants must submit the following: a brief resume detailing conducting experience; a statement of objectives; a repertoire list divided into categories of works sung, works studied and works conducted; three letters of recommendation; a videotape of both a choral ensemble performance and rehearsal conducted by the applicant, including choral works from several periods and styles, with at least one being a 20th century work. Master of Music applicants should have a minimum of two years' experience as the regular conductor of a choral ensemble. Doctor of Musical Arts applicants should have a minimum of four years' experience.

Composition

Applicants must submit the following: three carefully prepared scores and audio recordings of recent works; a complete list of all compositions, including dates and media; a statement of objectives; resume; transcripts from all universities attended. An on-campus interview with the composition faculty is encouraged but not required. Admission to graduate programs in composition is highly competitive and is limited to approximately six new students per year.

Conducting

Applicants must submit the following: a repertoire list, clearly indicating both works conducted in rehearsal and those conducted in performance; an unedited videotape from the orchestra's side of the podium, no less than 30 minutes in length, of which half should be of the applicant in rehearsal; a statement of objectives; three letters of recommendation; resume. Selected applicants will be invited to present a live audition with the university. Such applicants will be contacted to determine repertoire.

Jazz Studies

Applicants must submit a statement of objectives, resume and repertoire list. A performance audition is required for admission to this program. Specific audition requirements, along with other entrance requirements, are reviewed on an annual basis and published in the Application Requirements section online at usc.edu/music. Most applicants will also be asked to sit for a written examination consisting of listening to excerpts, basic jazz theory and jazz history.

Music Education

Applicants must submit the following: a resume listing group teaching experience (one year experience or more for M.M. applicants, three years' experience or more for DMA applicants); brief statement of objectives and professional goals; academic transcripts from all universities attended; writing sample (essay or research abstract on a music education topic for M.M. applicants, a copy of the master's thesis or written project on a music education topic for DMA applicants); an audition tape, approximately 15 minutes in length, of the applicant's solo performance field; three letters of recommendation.

Music History and Literature

Applicants must submit the following: a statement of objectives and professional goals; academic transcripts from all universities attended; three letters of recommendation; writing sample (one or two historical or analytical term papers or a copy of the master's thesis).

Performance

A performance audition is required for all applicants for admission to a *performance major*. In the case of some programs, additional materials are also required. Specific audition requirements, along with other entrance requirements, are reviewed on an annual basis and published in the Application Requirements section online at usc.edu/music.

Sacred Music

Applicants must submit the following: a brief resume detailing conducting and/or sacred music experience; a statement of objectives; a repertoire list divided into categories of works sung or performed, works studied and works conducted; three letters of recommendation; a videotape of both a choral ensemble performance and rehearsal conducted by the applicant, including choral works from several periods and styles, with at least one being a 20–21st century work. Master of Music applicants are preferred to have had a minimum of two years' experience as the regular conductor of a choral ensemble or worship leader. Doctor of Musical Arts applicants should have a minimum of four years' experience.

Master of Music

Unit and Grade Requirements

Thirty units of graduate work are required; a minimum of 15 units (excluding thesis) must be at the 500 level or higher. All students must satisfy the special requirements of their major department (see departmental adviser). Students must complete at least 26 semester units at USC, including the thesis or recital. A grade point average of not less than 3.0 (A = 4.0) is required for all graduate courses in music, and a grade of B or higher is required for all courses in the major department. Students who transfer credits must achieve this average on all combined transferred and residence units.

Transferred Credits

All credits transferred must be the equivalent of corresponding *current work* at USC. Transfer work must have been completed within seven years from the date of admission to a master's degree program to be applied toward that degree. Transfer credit petitions must be filed with the appropriate faculty chair and the chair's decision made no later than the end of the first year in either the master's or doctoral program.

Time Limit

The time limit for completing the Master of Music degree is five years. Progress is measured from the beginning of the first course at USC applied toward the degree. Extensions will be granted by petition to the Thornton School for only the most compelling reasons.

Thesis Requirements and Qualifying Exam Committees

A composition portfolio is required of candidates for the Master of Music degree in composition; a thesis or final project is required of candidates for the Master of Music degree in music education. For music education majors, the thesis will consist of a research document written on a topic approved by the music education department, the final project will consist of a creative project that will present the arrangement, production or design of innovative ideas, materials or curricula for specific applications in teaching music. Before registering for 594a Thesis, a student must choose a qualifying exam committee composed of three regular faculty, approved by the department chair, of which at least two come from the home department. The chair of the qualifying exam committee directly supervises the preparation of the thesis, the final acceptance of which is based upon the unanimous recommendation of all three members of the committee.

Master's Recital

At least one public recital is required of all candidates for the Master of Music degree with a major in choral music, composition, organ, strings, vocal arts or wind and percussion instruments. Two public recitals are required for majors in conducting, guitar, jazz studies, keyboard collaborative arts and piano. Candidates should apply at the Music Operations Office for recital dates. Some departments require that a candidate be prepared to play or conduct the program for the approval of a faculty committee in advance of the recital.

Students majoring in conducting may complete the recital requirements with a formal public recital or with special projects assigned, approved and attended by faculty from the conducting department, who also judge the acceptability of all such performances.

Students majoring in sacred music must complete a recital or project, as approved by the department.

Comprehensive Review

Candidates for the Master of Music must pass a comprehensive review toward the end of their course of study. This review, which is administered by the faculty of the major department, consists of an oral or written examination or a specially designated course; it will cover relevant aspects of musical performance, literature and technique.

Master of Music in Choral Music

Prerequisite

Applicants must hold a Bachelor of Music degree or its equivalent. Completed course work must include at least the following: Conducting MUCD 340, MUCD 343 and MUCD 441; Music History and Literature MUHL 331 and MUHL 332; Theory and Composition MUCO 232b, MUCO 233b and MUCO 338x. One year of German or French is strongly recommended. Applicants must have attained senior standing in a principal performance medium.

Keyboard Proficiency

A keyboard proficiency test will be given by the choral faculty during the student's first semester in residence to determine if additional study in keyboard is required.

Comprehensive Review

A final oral examination in choral literature, conducting and rehearsal techniques will be administered by the choral music faculty.

CURRICULUM REQUIREMENTS	UNITS
MUCM 440 (2), MUCM 541 (2), MUCM 542 (2), MUCM 543 (2), MUCM 590 (2)	10
MUCD 443 (2), MUCD 541 (6)	8
Ensemble	2
MUHL 570 (2), electives at 500 level (4)	6
MPVA 439 (2), MPVA 501VO (2)	4
Graduate recital	0
Comprehensive review	0
	30

Master of Music in Composition**Prerequisite**

The applicant must hold a Bachelor of Music degree with a major in composition or theory.

CURRICULUM REQUIREMENTS	UNITS
Ensemble	2
MUHL 570 (2), electives at the 500 level in MUHL or MUCO (6)	8
Individual instruction 501 in any performance medium (MPxx 501) or applicable MTEC or MUCD instruction	4
MUCO 537 (8), MUCO 592 (2), MUCO 536 (2)	12
Electives	4
Graduate recital	0
Comprehensive review	0
M.M. composition portfolio	0
	30

Master of Music in Conducting**Prerequisite**

The applicant must hold a bachelor's degree with a music major and have at least one year of experience conducting an orchestra.

CURRICULUM REQUIREMENTS	UNITS
MUCD 550 (8)	8
Ensemble (preferably chamber music)	4
MUHL 570 (2), MUHL 575 (2), MUHL 591 (2)	6
One course from MUHL 573 (2), MUHL 574 (2), MUHL 576 (2), MUHL 577 (2) or MUHL 578 (2)	2
MUCO 501 (2), MUCO 502 (2)	4
Electives	6
Two graduate recitals	0
Comprehensive review	0
	30

Master of Music in Jazz Studies**Prerequisite**

The applicant must hold a Bachelor of Music degree with a major in jazz studies or its equivalent.

CURRICULUM REQUIREMENTS	UNITS
MUEN 505 or MUEN 529 (4), MUEN 532 (4)	8
MUHL 570 (2), MUHL 578 (2), MUHL electives at the 500 level (2)	6
MUJZ 443 (2) or MUJZ 545 (2)	2
MUJZ 547 (2), MUJZ 553 (8)	10
Electives	4

Two graduate recitals	0
Comprehensive review	0
	30

Master of Music in Music Education**Prerequisite**

The applicant must hold a Bachelor of Music degree with a major in music education and have one year of teaching experience beyond supervised student teaching.

CURRICULUM REQUIREMENTS	UNITS
MUED 500 (3), MUED 505 (2), MUHL electives at the 500 level (4)	9
MUCD 441 (2) or MUCD 443 (2)	2
MUCO 501 (2) or MUCO 502 (2)	2
MUED 594ab (4), or MUED 590 (2) and MUED 592 (2)	4
Two courses from: MUED 501 (3), MUED 502 (3), MUED 503 (3) or MUED 504 (3)	6

Individual instruction (organ, piano, string instrument, vocal arts, or wind or percussion instrument), courses in conducting, composition or arranging, or ensemble

Electives in music	3
Comprehensive review	0
	30

Master of Music in Performance (Keyboard**Collaborative Arts)****Prerequisite**

Applicants must hold the Bachelor of Music degree with a major in piano or keyboard collaborative arts or equivalent background as determined by the collaborative arts faculty. It is strongly suggested that students who have not previously taken courses in Italian, French, English and German diction, or in song literature, enroll in the appropriate course(s) (MPVA 440, MPVA 441, MPVA 479) as part of their electives.

CURRICULUM REQUIREMENTS	UNITS
MUHL 570 (2), MUHL 578 (2), MUHL electives at the 500 level (4)	8
MPKS 481 (2), 553CP (8), 560 (2), 561 (2)	14
Electives in music	8
Two graduate recitals, one with voice(s), the other with instrument(s)	0
Comprehensive review	0
	30

Master of Music in Performance (Classical Guitar)**Prerequisite**

The applicant must hold a bachelor's degree with a major in music with guitar as the principal instrument.

CURRICULUM REQUIREMENTS	UNITS
MUEN 526 (2), electives (2)	4
MUHL 570 (2), MUHL 578 (2), MUHL electives at the 500 level (2)	6
MPGU 427 (3), MPGU 553CG (8), MPGU 557 (4)	15
MPKS 481 (2)	2
Electives	3
Two graduate recitals	0
Comprehensive review	0
	30

Master of Music in Performance (Studio Guitar)**Prerequisite**

The applicant must hold a bachelor's degree with a major in music with guitar as the principal instrument.

CURRICULUM REQUIREMENTS	UNITS
MUEN 526 (2), electives (2)	4
MUHL 570 (2), MUHL 578 (2), MUHL electives at the 500 level (2)	6
MPGU 553SG (8), MPGU 558 (4)	12
Music electives	4
Electives	4
Two graduate recitals	0
Comprehensive review	0
	30

Master of Music in Performance (Organ)**Prerequisite**

The applicant must hold a Bachelor of Music degree with a major in organ or equivalent.

CURRICULUM REQUIREMENTS	UNITS
Ensemble	2
MUHL 570 (2), MUHL 578 (2), MUHL electives at the 500 level (4)	8
MPKS 481 (2), MPKS 553OR (8)	10
Music electives (at least two from the 500 level)	6
Electives	4
Graduate recital	0
Comprehensive review	0
	30

Master of Music in Performance (Piano)**Prerequisite**

The applicant must hold a Bachelor of Music degree in piano or equivalent.

CURRICULUM REQUIREMENTS	UNITS
Ensemble	2
MUHL 570 (2), MUHL electives at 500 level (6)	8
MPKS 553P (8), MPKS 450a (2), MPKS 520 (6)	16
Electives	4
Two graduate recitals	0
Comprehensive review	0
	30

Master of Music in Performance (Violin), (Viola), (Violoncello), (Double Bass) or (Harp)**Prerequisite**

The applicant must hold a Bachelor of Music degree with a major in a string instrument or equivalent.

CURRICULUM REQUIREMENTS	UNITS
MUCD 443	2
MUEN 527 (2) and MUEN 520, MUEN 530 or MUEN 550 (4)	6
MUHL 570 (2), MUHL 578 (2), MUHL electives at the 500 level (4)	8
MPKS 481	2
MPST 553 (8)	8
Music electives	4
Graduate recital	0
Comprehensive review	0
	30

Master of Music in Performance (Vocal Arts)**Prerequisite**

The applicant must hold a Bachelor of Music degree with a major in vocal arts. Students who have not had formal training in foreign language, diction, vocal pedagogy, acting for singers, song literature and in Italian, French or German languages must show competency in these areas through examination or complete appropriate course work with a grade of B or higher.

CURRICULUM REQUIREMENTS	UNITS
Ensemble	2
MUHL 570 (2), electives at 500 level (2)	4
MPVA 443 (2), MPVA 540 (2), MPVA 541 (2), MPVA 553VO (8)	14
Electives in music (400 or 500 level)	5
Electives	5
Graduate recital	0
Comprehensive review	0
	30

Comprehensive Review

A final examination in vocal pedagogy, art song and oratorio literature and diction will be administered by the vocal arts faculty. Students are required to write extensive program notes for the degree recital.

USC Opera

USC Opera is an integral part of the Vocal Arts Department, providing career development opportunities for singers, coach/pianists, conductors and directors. The program includes instruction in opera history and literature, coaching techniques, stage direction, body movement for singers, stage training, role study and analysis.

The opera workshop is a repertory experience involving preparation and performance of operatic works and excerpts for performance both on and off the USC campus.

Master of Music in Performance (Flute), (Oboe), (Clarinet), (Bassoon), (Saxophone), (French Horn), (Trumpet), (Trombone), (Tuba) or (Percussion)**Prerequisite**

The applicant must hold a Bachelor of Music degree with a major in a wind instrument or percussion or equivalent.

CURRICULUM REQUIREMENTS	UNITS
MUCD 443	2
MUEN 523 (4), MUEN 525 (4)	8
MUHL 570 (2), MUHL 578 (2), MUHL electives at the 500 level (4)	8
MPWP 481 or MPWP 482 (2), MPWP 551 (2), MPWP 553 (8)	12
Graduate recital	0
Comprehensive review	0
	30

Master of Music in Sacred Music**Prerequisite**

Applicants must hold a Bachelor of Music degree or its equivalent. Completed course work must include at least the following or their equivalent: Conducting MUCD 340, MUCD 343 and MUCD 441; Music History and Literature MUHL 331 and MUHL 332; Theory

and Composition MUCO 232b, MUCO 233b and MUCO 338x. One year of German or French is strongly recommended. Applicants must have attained senior standing in a principal performance medium.

Keyboard and Voice Proficiency

Proficiency tests in keyboard and voice will be given by the choral and sacred music faculty during the student's first semester in residence to determine if additional study in either medium is required.

Comprehensive Review

A final oral examination in sacred music and related areas will be administered by the sacred and choral music faculty.

CURRICULUM REQUIREMENTS	UNITS
MUCM 440** (2), MUCM 541** (2), MUCM 542** (2)	6
MSCR 473 or MSCR 475	2
MSCR 571 (2), MSCR 572 (2), MSCR 590 (2)	6
MSCR 474 or MPVA 439	2
MUCD 541**	4
Ensemble*	2
MUHL 570 (2), MUHL electives at the 500 level (2)	4
MPKS 501** (PI or OR) or MPVA 501**	2
Electives	2
Graduate recital or project	0
Comprehensive review	0
Total:	30

*Sacred music majors must participate in a choral ensemble chosen from MUEN 508, MUEN 510, MUEN 511 or MUEN 512 each semester if enrolled for 4 or more units. In some cases, large instrumental ensemble courses may be substituted.

**In some cases, MUHL 500-level courses and/or private instruction in organ, piano, voice or guitar may be substituted for MUCM 440, MUCM 541, MUCM 542 and MUCD 541. In some cases, instruction in guitar or another instrument may be substituted for MPKS 501 or MPVA 501.

Master of Arts

This degree is under the jurisdiction of the Graduate School. Students should also refer to the Graduate School section of this catalogue for general regulations, page 97xx.

Departmental Requirements

Applicants will be evaluated on the basis of scores on the Graduate Record Examinations, transcripts of previous college courses, a research paper and letters of reference.

Regular (classified) standing is achieved when the general test of the Graduate Record Examinations has been taken, and when the Music Graduate Entrance Examinations have been completed satisfactorily. Remedial course work, if recommended, may be substituted for repetition of examinations.

Language Requirement

Students are required to demonstrate a reading knowledge by passing an examination in one foreign language chosen by the student from among French, German,

Italian or Latin. This requirement must be passed prior to the comprehensive examination.

Prerequisites

Applicants should have an undergraduate degree with a major in music or the equivalent, and a substantial background in languages, arts and letters.

Degree Requirements for the Music History and Literature Emphasis

REQUIREMENTS	UNITS
MUHL 570	2
MUHL courses numbered 579, 600–699	6
Courses in history, language, literature or the arts other than music	8
Courses drawn from: MUHL 500–699, MUCO 501 and MUCO 502	8
Electives	6
Comprehensive examination	0
	30

Degree Requirements for the Early Music Performance Emphasis

REQUIREMENTS	UNITS
MUEN 550	3
MUHL 570 (2), MUHL 572 (2), MUHL 574 (2), MUHL 575 (2), MUHL 589 (2), MUHL 591 (2), MUHL 594ab (2-2),	16
MPPEM 450 (2), MPPEM 553 (5)	7
Elective in music	2
Electives in letters, arts and sciences	4
	32

The thesis will include the planning, research, preparation and leadership of a full-length program in early music. This practical work will be supported by a written essay that deals, as appropriate, with historical data sources, authentic performance practices and a stylistic assessment of the repertoire that is performed. In lieu of a comprehensive examination, candidates for the Early Music Performance Emphasis will be required to pass periodic reviews to demonstrate progress.

Non-Degree Programs**Artist Diploma Program**

This program is designed for young artists of exceptional ability and musical sensitivity who plan careers as solo performers. The Artist Diploma Program provides young artists with the opportunity to devote their full time to concentrated study and practice for the duration of their assigned programs.

Entrance Requirements

Following the recommendation of the student's major department, a performance audition, consisting of a full-length recital before the Artist Diploma Committee, is required.

Curriculum Requirements

A minimum of 16 units at the 754 level (from MPPEM, MPGU, MPKS, MPST, MPVA or MPWP) and four full-length recitals are required. This program typically requires two to three consecutive years of study for completion.

Graduate Certificate in Arts Leadership**Certificate in Arts Leadership (ARTL)**

The graduate program in arts leadership is a two-semester certificate program for artists, arts administrators and cultural workers of all types to develop the skills necessary to become successful leaders in the arts and arts organizations in a rapidly changing and radically altered contemporary world. The program is based in the Thornton School of Music, but it is designed to be applicable for artists/students engaged in any of the arts disciplines who want to develop their leadership skills in the hybrid and holistic environment of the contemporary arts. The program is highly individualized and deeply student centered in its approach, with simultaneous emphases on research, discovery, theory and current practice. With strong faculty mentorship and guidance from the director of the program and other working professionals in the field, students explore the dimensions of the most current issues and ideas while developing specific real-world applications of these ideas to their own practice as artists and leaders.

The program consists of a minimum of 18 units which can be completed in two semesters. The program begins with a 2-unit gateway course (ARTL 500) which introduces the students to the varied, complex and contentious issues in the arts and arts leadership that currently exist in the contemporary arts world. From this experience, students will develop a life plan that examines their own career and life trajectory for the next several years, providing a guidepost for their own personal development in arts leadership. Students will take four core courses including ARTL 501, which focuses on a deep understanding and application of the challenges of executive leadership in the arts and ARTL 502, which looks at major environmental trends affecting the arts and how that impacts the student's leadership role in the arts. Essential to all of these courses is developing the ability to think, speak and write critically about the arts in the contemporary world, key components of strong arts leadership. There is also a two semester practicum, ARTL 510, in which the student creates, develops and completes an actual arts leadership project of his or her own choosing, supported by faculty mentorship and the cohort of other practicum students.

Admission to the program is by application, reviewed and approved by the director of the program. Admission to the practicum requires a project proposal to be created by the student and approved by the director of the program.

CORE COURSES		UNITS
ARTL 500	Arts Leadership and Arts Entrepreneurship	2
ARTL 501	Executive Leadership in the Arts	2
ARTL 502	Issues in the Arts and the Contemporary World	2
ARTL 503	Arts Organizations: Innovation and New Models	2
ARTL 504	Arts and Community: Current Practice and New Visions	2
ARTL 510	Arts Leadership Practicum (2 semesters)	2-2 14

SELECT A MINIMUM OF 4 UNITS**FROM THE FOLLOWING COURSES***

		UNITS
MUIN 570	The Music Industry	4
PAS 561	Curatorial/Organizational Models	2
PAS 571	Histories of Art in the Public Sphere	3
PAS 572	Contemporary Art in the Public Sphere	3
PAS 585	Theorizing the Public Realm	3
PPD 675	Nonprofit Management and Leadership	4
PPD 687	Strategic Management in Nonprofit Sector**	4
PPD 689	The Nonprofit Sector and Philanthropy	4
PPDE 645	Financial Management of Nonprofit Organizations	4
		4

*Courses may be chosen from this list or in consultation with the Director of Arts Leadership.

**Prerequisites: PPD 675 and PPD 689

Minimum total units 18

Graduate Certificate Program in Performance

This two-year graduate-level program is designed for students who have completed their undergraduate education in music, or its equivalent, and intend to concentrate their energies on the full-time development of their discipline.

Entrance Requirements

A performance audition is required with repertory to be determined by the student's primary department.

Curriculum Requirements

The requirements for this program consist of 16 units of Graduate Certificate Performance (4 units per semester of MPEM 554, MPGU 554, MPKS 554, MPST 554, MPVA 554, MPWP 554 or MUJZ 554). Graduate Certificate Performance encompasses individual instruction, studio class and two ensembles or the equivalent as appropriate to the discipline.

Graduate Certificate Program in Scoring for Motion Pictures and Television

This one-year program is designed for students who hold the Bachelor of Music in Composition or its equivalent. Students in the SMPVT program must maintain a 3.0 GPA (A = 4.0), with no course grade lower than a C (2.0). Work graded C- or below is not acceptable for credit toward the certificate.

Entrance Requirements

Specific entrance requirements are reviewed on an annual basis and published in the Application Requirements section online at usc.edu/music.

CURRICULUM REQUIREMENTS	UNITS
MUCO 440ab (4), MUCO 442ab (4), MUCO 443ab (4), MUCO 520 (2), MUCO 522ab (4), MUCO 523ab (4), MUCO 545 (4), MUCO 560ab (4)	30

Doctor of Musical Arts**Degree Prerequisites**

DMA applicants must complete the appropriate master of music degree program or its equivalent.

Admission

Refer to School of Music Graduate Degrees, Admission Requirements.

Graduate Record Examinations

Scores from the General Test of the Graduate Record Examinations (GRE) are required for application and admission to the Doctor of Musical Arts degree. Test scores on the GRE that are more than five years old at the time of application are not accepted.

Graduate Committee Interview

Before the completion of 16 units beyond the master's degree and before permission to present the second doctoral recital is requested, doctoral students must submit a detailed curriculum vitae to the Graduate Committee of the School of Music summarizing their background and objectives. The student will be evaluated on musicianship and general academic qualifications, teaching experience and the validity and quality of creative, literary or performance projects submitted. The committee determines the student's continuation in the program, proposed areas of concentration and the qualifying exam committee members.

Course Requirements

Each student is required to prepare four areas of concentration: the major field, an academic field (chosen from among musicology, theory and analysis, music education, choral music or sacred music), and elective areas selected in consultation with an adviser from two of the following: theory or compositional skills (composition, counterpoint, orchestration, band arranging or choral arranging); performance, early music or jazz studies; music education; sacred or choral music; conducting; performance pedagogy; electroacoustic media; a field outside of music. The academic field may not duplicate a major or an elective field. Admission to elective and academic fields must be approved by the department concerned, prior to the Graduate Committee interview.

The elective and academic fields are supported by courses that are determined by the department in which these fields are administered. Six to 8 units are taken in elective fields; 8 to 10 units in the academic field. No more than two of the four fields may be under the guidance of the same department within the School of Music, and at least one of the elective fields must result in a written examination as part of the qualifying examinations.

Required courses for each major curriculum are listed subsequently in this catalogue. Special requirements in any of the four areas of concentration (if any) are determined by the qualifying exam committee member responsible for that area.

A minimum of 65 graduate units beyond the bachelor's degree are required to complete the degree. Fifty-five or more units must be in music, 12 of these beyond the master's level must be in the major. At least 40 of these must be at the 500 level or higher. All course work

earned under these requirements for a doctoral degree is considered to be obsolete after 10 years from the date of completion of such work and may not be used to fulfill degree requirements.

Residence Requirement

A minimum of two years of full-time study beyond the Master of Music degree is required for the Doctor of Musical Arts. At least one year of full-time study beyond the master's degree (8 units or more per semester) must be in residence at USC.

Grade Point Average Requirements

A minimum grade point average of 3.0 (A = 4.0) is required for all graduate course units in music. A grade of B or higher is required for all courses in the major.

Transfer Credit

The Degree Progress Department in the Office of Academic Records and Registrar determines whether course work taken elsewhere is available for transfer credit. A maximum of 30 units of transfer credit may be applied toward a doctoral degree in music. Whether such credit is applicable toward a specific requirement in a major or minor field is determined by the chair of the department in the School of Music in which the subject is taught, pending approval by the dean of the Thornton School of Music. Transfer credit petitions must be filed with the appropriate faculty chair and the chair's decision made no later than the end of the first year in either the master's or doctoral program. Transfer work must have been completed within 10 years of admission to the DMA program to be applied toward that degree.

Foreign Language

A reading knowledge of French, German, Italian or Spanish is required of all students. Departments within the Thornton School may require additional language skills. All language requirements must be fulfilled one semester before the qualifying examination at the latest.

Qualifying Exam Committee

The qualifying exam committee is composed of at least five members: two faculty from the major department, one of whom will serve as chair, and a faculty member from each of the three other areas of concentration. At least three members of a committee must be drawn from tenured and tenure-track faculty.

The committee administers the written and oral parts of the qualifying examination. The committee continues to serve until the qualifying examination has been passed, the dissertation topic approved (if applicable) and the student is admitted to candidacy. For students in curricula which require recitals, the qualifying exam committee serves as the recital committee and is responsible for the format, content, scheduling, and approval of the required performances.

Qualifying Examination

The qualifying examination for the DMA is administered by the student's qualifying exam committee. It is comprehensive, partly written and partly oral, and designed in part to test the student's fitness for independence as a performer, composer, teacher, researcher and/or scholar. The student must obtain permission from the qualifying exam committee to take the qualifying

examination and schedule it at least two months in advance to ensure the committee's availability. The examination may be taken either during the final semester of course work (except dissertation or individual instruction) or within two semesters immediately after, provided that all members of the qualifying exam committee are available to administer it. In degree programs that require the presentation of four major recitals, at least two major recitals must be presented prior to the administration of the qualifying examination. Qualifying examinations will not be scheduled during summer sessions except under extraordinary circumstances and only with the written approval of all qualifying exam committee members. All portions of the examination must be completed within one month.

Written examinations are prepared and read by the qualifying exam committee. All of the student's areas of concentration, except performance, conducting and composition, will be covered in a written examination or comparable project. The examination in performance, conducting or composition normally is a public recital, evaluated by appropriate members of the qualifying exam committee. If the written examinations, comparable project(s), or recital(s) are judged to be satisfactory, an oral examination is then given. This examination covers in depth topics discussed in the written examinations and/or new material.

The two representatives of the department and the academic minor representative must be present at the oral examination and render a judgment on the acceptability of the qualifying examinations as a whole. The representatives of the two elective fields, at their discretion, may take part in the oral examination, especially if they feel that the project, recital or written examination passed by the candidate for their field should be explored further. Their presence is not required if they feel that the candidate has demonstrated knowledge and accomplishments appropriate for an elective field in their disciplines. The examinations will be reported as passing if there is no more than one dissenting vote on the qualifying exam committee. A student must pass both the written and oral examinations to pass the qualifying examination. A pass on the examination cannot be made contingent upon any form of additional work.

If a student fails the qualifying examination, the qualifying exam committee may permit the student to repeat it once at a mutually satisfactory time within a period of not less than six months nor more than one year from the date of the first examination. A student may not take the qualifying examination more than twice.

Admission to Candidacy

Admission to candidacy occurs after the student has passed the qualifying examination, upon formal action of the dean of the Thornton School. The dissertation or one final recital must be completed *after* admission to candidacy.

Doctoral Dissertation

A dissertation based on original investigation is required of candidates in composition, music education and choral music. The dissertation must reveal scholarly ability, technical mastery, capacity for independent research and originality in creative thought.

Dissertation Committee

After the qualifying exam committee recommends admission to candidacy and approves the dissertation, it is reduced to three members. This smaller committee guides the student through the completion of the final project. Additional members may be added at the discretion of the chair of the committee if the topic requires special expertise.

Registration

The student must register in 794 Dissertation each semester after admission to candidacy until degree requirements are completed. Registration for the dissertation in no less than two regular term semesters following admission to candidacy entitles the candidate to supervision by the dissertation committee. If the dissertation is not completed and accepted within two semesters, the candidate must register for 794 each semester thereafter until the document has been accepted. No more than 8 units of credit in 794 may be accumulated regardless of the number of semesters the candidate may be required to register.

A candidate who must withdraw temporarily from registration in 794 for a semester must formally report this before the beginning of that semester to the Office of Doctoral Programs, Thornton School of Music, requesting by petition a leave of absence. During a leave of absence the candidate will not be entitled to assistance from the qualifying exam committee or to the use of university facilities. Leave will be granted only under exceptional circumstances.

Format for Theses and Dissertations

All theses and dissertations submitted for requirements for graduate degrees must conform to university regulations in format and method of preparation. See Theses and Dissertations, page 100xx.

Defense of the Dissertation

After meeting all requirements including the qualifying examination, the candidate must defend the dissertation. This defense occurs to determine for the committee that the candidate has attained the stage of scholarly advancement and power of investigation demanded for recommendation to the doctorate. While this oral defense is open to the general university community, only the members of the dissertation committee have the authority to recommend its acceptance or denial. The recommendation must be unanimous.

At least seven weeks before the scheduled date of the defense of the dissertation, written approval by all members of the candidate's dissertation committee must be filed with the dean of the Thornton School of Music. The typed copy for the abstract of the dissertation is due at this time.

A candidate may defend the dissertation on the basis of an approved preliminary copy. If the defense is satisfactory and the committee is satisfied with the manuscript as presented, the committee then signs the Approval to Submit Defended and Final Copy of the Doctoral Work form. If additional work is required, the form is left unsigned until the work has been approved.

The final electronic PDF copy of the dissertation, together with signed signature sheet and approval forms, must be presented to the Thesis Editor, the Graduate School, GFS 315, by the Graduate School's submission

date and times. Approval of format and acceptance by the Graduate School must be presented to the dean of the Thornton School of Music at least one week before the end of the semester.

Abstract of Dissertation

Since the abstract of the dissertation is published in Dissertation Abstracts International, it should be written with care and be representative of the final draft of the dissertation.

Time Schedule

The DMA is established on the assumption that a well-qualified student can complete it in three years of full-time work. If the student pursues part-time graduate study, or if the field of graduate work is not that of undergraduate study, more time may be required.

The time limit for completing the Doctor of Musical Arts degree is eight years. For students who earned an applicable master's degree within five years prior to admission to the doctoral program, the time limit for completing the Doctor of Musical Arts degree is six years. Progress is measured from the beginning of the first course at USC applied toward the degree. Extensions will be granted by petition to the Thornton School for only the most compelling reasons.

Basic DMA Curriculum

REQUIRED FOR ALL DMA CANDIDATES	UNITS
MUCD 441* (2), MUCD 443 (2)	4
MUCO 501 (2), MUCO 502 (2)	4
MUED 505	2
MUHL 570	2
MUHL electives numbered 500 through 695	6
Ensemble	2
	20

*Choral music majors are exempt from taking MUCD 441.

Courses with similar content taken for graduate credit in another accredited institution may be substituted, subject to departmental approval. Master's degree credit for ensemble taken at USC may fulfill this requirement, subject to departmental approval.

Choral Music Major

A keyboard proficiency test will be given by the choral faculty during the student's first semester in residence to determine if additional study in keyboard is required.

CURRICULUM REQUIREMENTS	UNITS
Basic DMA curriculum**	20
MUCM 440* (2), MUCM 541* (2), MUCM 542* (2), MUCM 643 (4), MUCM 794ab (2-2)	14
MSCR 571	2
MUCD 541 (4), MUCD 641 (2), MUCD 653 (2)	8
Ensemble (500 level; choral music majors must participate in a choral ensemble each semester if enrolled for 4 or more units)	2
Electives	19

Conduct two principal choral concerts (at least one of which will include instrumental ensemble)	0 65
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*May be taken as part of the master's degree.

**Choral music majors are not required to take MUCD 441.

Composition Major

CURRICULUM REQUIREMENTS	UNITS
Basic DMA curriculum	20
MUCO 536 (4), MUCO 592 (4), MUCO 637 (4), MUCO 737 (4), MUCO 794ab (4)	20
Electives	25
Graduate recital	0
	65

Jazz Studies Major

CURRICULUM REQUIREMENTS	UNITS
Basic DMA curriculum	20
MUEN 532	4
MUJZ 443 (2), MUJZ 545 (2), MUJZ 547 (4), MUJZ 653 (8), MUJZ 688 (4)	20
Electives	21
Two recitals of original compositions and arrangements written while in the DMA program	0
Lecture-recital in conjunction with an appropriate research project	0
	65

Music Education Major

CURRICULUM REQUIREMENTS	UNITS
Basic DMA curriculum*	20
MUED 500 (3), MUED 605 (3), MUED 606 (3), MUED 607 (3), MUED 790 (1), MUED 791 (3), MUED 794ab (4)	20
Two courses from: MUED 501 (3), MUED 502 (3), MUED 503 (3), MUED 504 (3)	6
One course from: MUED 792 (3), MUED 793 (3)	3
Electives	16
	65

*MUED 500 may be taken as a substitute for MUHL 570 in the basic DMA curriculum.

Performance Major

It is the objective of the performance curriculum to combine high standards of performance with intellectual accomplishments appropriate to a university degree. Candidates electing this major must present at least four major public appearances: two solo recitals and two other appropriate appearances. The exact format, content and scheduling of the four appearances are the responsibility of the candidate's qualifying exam committee.

CURRICULUM REQUIREMENTS	UNITS
Basic DMA curriculum	20
Individual instruction 653 (take organ, string instrument, vocal arts, wind instrument or percussion for a maximum of 12 units)	12
Electives	33

Two solo recitals and two other appropriate performances	0 65
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String and wind instrument and percussion majors must participate in a large ensemble each semester if enrolled in four or more units.

Performance Major — Piano

CURRICULUM REQUIREMENTS	UNITS
Basic DMA curriculum	20
MPKS 653 (12), MPKS 520 (6)	18
Electives	27
Four graduate recitals: two solo recitals, one chamber recital, and one lecture-recital	0
	65

Performance Major — Keyboard Collaborative Arts

CURRICULUM REQUIREMENTS	UNITS
Basic DMA curriculum	20
MPKS 481 (2), MPKS 560 (2), MPKS 561 (2), MPKS 653 (12)	18
Electives	27
Four doctoral level recitals; one with voice(s), one with instrument(s), one lecture recital, and other recital as approved	0
	65

The exact format, content and scheduling of the four graduate recitals are the responsibility of the candidate's major professor.

Performance Major — Early Music

CURRICULUM REQUIREMENTS	UNITS
Basic DMA curriculum*	20
MPEM 653 (8); MPEM 650 (4)	12
MUHL 572 (2), MUHL 589 (2), MUHL 591 (2)	6
MUEN 650	4
Electives	23
Four graduate recitals: two as soloist and ensemble director, one lecture-recital, and one recital of the student's choice	0
	65

*Must include MUHL 574 and MUHL 575.

Performance Major — Classical Guitar

CURRICULUM REQUIREMENTS	UNITS
Basic DMA curriculum	20
MPGU 653 (12), MPGU 427 (3)	15
MPKS 481	2
Electives	28
Two solo recitals and two other appropriate performances	0
	65

Performance Major — Studio Guitar

CURRICULUM REQUIREMENTS	UNITS
Basic DMA curriculum	20
MPGU 558 (4), MPGU 653 (12)	16
MUEN 526 (4)	4

Electives	25
Four doctoral recitals, one of which must be a lecture recital in conjunction with an appropriate research project	0
	65

Sacred Music Major

Proficiency tests in both keyboard and voice will be given by the choral and sacred music faculty during the student's first semester in residence to determine if additional study in either area is required.

CURRICULUM REQUIREMENTS	UNITS
Basic D.M.A. Curriculum	20
MSCR 474 or MPVA 439****	2
MSCR 571*** (2), MSCR 572*** (2)	4
MSCR 790 or Mxxx-501	4
MSCR 794ab Dissertation/Final Project	4
MUEN xxx Ensemble*	2
Choose 4 units from the following:	
MSCR 473, MSCR 475 or MUHL 588	4
Electives to fulfill the academic field and two elective fields**	25
Lecture/Recital	0
Total required for degree:	65

*Sacred music majors must participate in a choral ensemble chosen from MUEN 508, MUEN 510, MUEN 511, or MUEN 512 each semester if enrolled for 4 or more units.

**Requires one elective field in a performance area.

***If these courses have already been taken toward a Master of Music degree at USC, then 500-level MUHL courses or 500-level MUCO analysis courses should be substituted, on consultation with the Sacred Music faculty.

****MPVA 439 has a prerequisite of MPVA 438. Waiver of MPVA 438 will be determined by the department, pending students' knowledge and background in vocal pedagogy.

Doctor of Philosophy

The Doctor of Philosophy degree with a major in music is granted by the Graduate School. Candidates for the Ph.D. in music should also refer to the Graduate School section of this catalogue for general regulations, page 97xx.

A substantial background in music and liberal arts is required. Graduate course requirements for the Ph.D. are adapted to the needs and research interests of the individual student. A minimum of 60 post-baccalaureate units is required.

Foreign Language Requirements

Students are required to demonstrate a reading knowledge by passing an examination in German and one other foreign language chosen by the student from among French, Italian or Latin. With the permission of the chair of the qualifying exam committee, a foreign language relevant to the dissertation may be chosen in place of French, Italian or Latin. The language requirement for the M.A. degree may be applied toward the Ph.D. Doctoral language requirements should be passed as early as possible, but, at latest, during the fourth semester of course work.

Screening Procedure

Before the completion of 24 units of graduate work at USC and with the approval of the department chair, students must be interviewed by the curriculum committee of the School of Music. Continuance in course work will be contingent upon approval of the committee. Ph.D. candidates in musicology who did not receive an M.A. degree from USC must take the M.A. comprehensive examination in historical musicology prior to the interview. Continuance in course work will be contingent upon passing these examinations.

Historical Musicology Emphasis

REQUIREMENTS	UNITS
MUHL 570	2
Courses selected from:	
MUHL 579, MUHL 600-699	12
Electives in history, language, literature or arts other than music	8
Courses drawn from:	
MUHL 500-699, MUCO 501, MUCO 502	10
Electives in music, letters, arts and sciences	24
Dissertation (MUHL 794ab)	4
	60

Courses of Instruction

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

ARTS LEADERSHIP

ARTL 499 Special Topics (2-4, max 8) Selected topics of current interest.

ARTL 500 Arts Leadership and Arts Entrepreneurship (2, FaSp) Introduction to key issues involved in both managing an arts organization and creating sustainable enterprise. For students in music, arts, public policy, and related fields.

ARTL 501 Executive Leadership in the Arts (2, FaSp) Investigation into a variety of leadership approaches within an arts organization, with a focus on the development of the student's own leadership capacity.

ARTL 502 Issues in the Arts and the Contemporary World (2, FaSp) Examination of major environmental trends including changing demographics, new business models, rapidly developing technology and globalization, and understanding their implications for the arts.

ARTL 503 Arts Organizations: Innovation and New Models (2, FaSp) Designed for current and future arts leaders interested in looking critically at organizational practice and bringing innovative solutions to old problems in a contemporary context.

ARTL 504 Arts and the Community: Current Practice and New Visions (2, FaSp) Exploration of a range of ideas, ideologies and strategies that have historically been used to connect arts organizations to their communities.

ARTL 510 Arts Leadership Practicum (2, max 4, FaSp) Year-long practicum which puts ideas and concepts into practice. Each student will conceptualize, develop, and complete an arts project of his/her own choosing.

ARTL 599 Special Topics (2-4, max 8) Selected topics of current interest.

CHORAL MUSIC (MUCM)

MUCM 320 Introduction to Choral Music (2) An introduction to the many facets of choral music. Grounding in the intellectual and practical issues of choirs, singing, and choral literature. *Recommended preparation:* ability to read music.

MUCM 390 Special Problems (1-4) Supervised, individual studies. No more than one registration is permitted. Enrollment by petition only.

MUCM 440 Choral Development (2) Problems of achieving proper balance, blend, intonation, diction, precision, etc., in choral groups; criteria for selection of repertoire for particular groups. Junior standing in music.

MUCM 490x Directed Research (1-8, max 12) Individual research and readings. Not available for graduate credit.

MUCM 499 Special Topics (2-4, max 8) Selected topics of current interest.

MUCM 541 Choral Literature I (2) Choral composition from c. 1500 to 1800. Performance and analysis of representative works.

MUCM 542 Choral Literature II (2) 19th and 20th century choral works; criteria for program building.

MUCM 543 Seminar in Choral Music (2, max 4) Advanced choral techniques; historical, analytical and performance problems. *Prerequisite:* MUCM 641.

MUCM 590 Directed Research (1-12) Supervised research in preparation for the Master's recital. Graded CR/NC.

MUCM 599 Special Topics (2-4, max 8) Selected topics of current interest.

MUCM 641 Choral Literature III (2) Detailed study of selected major choral works; historical context, score analysis, performance practices. *Prerequisite:* MUCM 541, MUCM 542.

MUCM 643 Seminar in Choral Music II (2, max 4, Sp) Continuation of MUCM 543, with concentration on the conducting problems in major choral-orchestral works.

MUCM 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MUCM 794abcdz Doctoral Dissertation (2-2-2-2-0)
Credit on acceptance of dissertation. Graded IP/CR/NC.

SACRED MUSIC (MSCR)

MSCR 390 Special Problems (4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only. (Duplicates credit in former MUCH 390.)

MSCR 473 Hymnology (2) Study of hymns and hymn tunes, and their functions, from the formation of the Christian Church to the present; historical survey of the literature. (Duplicates credit in former MUCH 473.)

MSCR 474 The Organ in Worship and Congregational Life (2) Accompanying; hymn playing, transposition, improvisation, vocal score reading; conducting from the console; service repertoire. Basic knowledge of the organ as an instrument and planning for and purchase of an organ. (Duplicates credit in former MUCH 474.)

MSCR 475 Introduction to Jewish Music (2) Development of Jewish music from biblical times to the present, with emphasis on liturgical practices, traditions of itinerant musicians and the adaptability of community song.

MSCR 490x Directed Research (1-8, max 12) Individual research and readings. Not available for graduate credit. Open only to juniors and seniors. (Duplicates credit in former MUCH 490.)

MSCR 499 Special Topics (2-4, max 8) Selected topics of current interest.

MSCR 570 Foundations of Sacred Music (2) An introduction to the history of sacred music, liturgical practices and worship traditions from antiquity to present day. (Duplicates credit in former MUCH 570.)

MSCR 571 Music of the Great Liturgies (2) Comparison of the Jewish, Eastern Orthodox, Roman Catholic, Lutheran, and Anglican liturgies and their music; relation to music in the nonliturgical service; the church year. (Duplicates credit in former MUCH 571.)

MSCR 572 Sacred Music Administration (2, FsSpSm) Developing, maintaining and administering the music program of the church or other religious institutions. Programming, staffing, developing budgets, techniques and repertoire for the graded choir program, handbell choir and other ensembles. (Duplicates credit in former MUCH 572.)

MSCR 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC. (Duplicates credit in former MUCH 590.)

MSCR 599 Special Topics (2-4, max 8) Selected topics of current interest.

MSCR 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC. (Duplicates credit in former MUCH 790.)

MSCR 794abcdz Doctoral Dissertation (2-2-2-2-0)
Credit on acceptance of dissertation. Graded IP/CR/NC. (Duplicates credit in former MUCH 794abcdz.)

COMPOSITION (MUCO)

MUCO 101x Fundamentals of Music Theory (2, FaSp) An introductory course in music theory required for those majors in need of remedial training, and available to the general student who wishes to develop music writing skills. Not available for credit to B.M. and B.A. music majors. *Recommended preparation:* ability to read music.

MUCO 130abx Basics of Music Theory (a: 3, Fa; b: 3, Sp) Introduction to music theory; scales, intervals, principles of common practice and popular music harmony; melodic, harmonic, and structural analysis; 20th century developments. Not available for credit to B.M. majors.

MUCO 131ab Harmony in Popular Music (2, Fa; 2, Sp) Study of harmony used in the popular music idiom, as well as diminished chord patterns, modulation techniques, basic modal theory, and principles of melodic construction. *Prerequisite:* MUCO 130b.

MUCO 132ab Aural Skills I (a: 2, Fa; b: 2, Sp) Sight-singing, dictation, related keyboard application.

MUCO 133ab Theory I (a: 3, Fa; b: 3, Sp) a: Notation, scales, intervals; introduction to counterpoint; harmonic principles of the common practice period; analysis, written work. b: Continuation of MUCO 133a; elements of form; application of analysis to performance. Concurrent registration in Aural Skills required.

MUCO 135 Counterpoint I (2, Sp) The study of the techniques of modal counterpoint; exercises in two-, three- and four-part writing in 16th century style. *Prerequisite:* MUCO 137a.

MUCO 137ab Introduction to Composition (2-2, FaSp) Beginning exercises in composition, study and class discussion of assigned scores and recordings.

MUCO 221abx Composition for Non-Majors (2-2, FaSp) Introduction to the composition of concert music. Includes set exercises, free composition, study of selected compositions. Intended for interested, qualified students not majoring in composition. Not available for degree credit to composition majors. *Prerequisite:* MUCO 221a; *recommended preparation:* MUCO 130bx, MUCO 133b.

MUCO 232ab Aural Skills II (a: 2, Fa; b: 2, Sp) Continuation of MUCO 132ab.

MUCO 233ab Theory II (a: 3, Fa; b: 3, Sp) a: Analysis of representative pieces from the classic and romantic periods; exercises in composition. b: Survey of 20th century developments; composition utilizing 20th century techniques. *Prerequisite:* MUCO 133b.

MUCO 235 Counterpoint II (2, Sp) Studies in tonal counterpoint; two-, three- and four-part counterpoint in 18th century style; polyphonic variations; inventions. *Prerequisite:* MUCO 137b.

MUCO 236 Orchestration I (2, Fa) Introduction to the principles of instrumentation; ranges techniques, timbres; transpositions of orchestral instruments; beginning exercises in orchestration. *Prerequisite:* MUCO 137b.

MUCO 237ab Composition I (4-4, FaSp) Composition in shorter forms, continuation of score analysis and listening assignments. *Prerequisite:* MUCO 137b.

MUCO 300 Theory Review (1, FaSpSm) Review of materials covered in Theory I and II. For students whose entrance examination in music theory indicates the need for further study.

MUCO 321x Composition for Non-Majors II (1-2, max 8, FaSpSm) Individual instruction in composition for non-composition majors. Continuation of MUCO 221abx. Not open to B.M. in composition majors. *Prerequisite:* MUCO 221bx.

MUCO 333 Aural Skills Review (1, FaSp) Review of the materials covered in Aural Skills I, II, and III. For students whose entrance examination in aural skills indicates the need for further study.

MUCO 336ab Orchestration II (a: 2, Fa; b: 2, Sp) Intermediate exercises in orchestration, including scoring for chamber ensembles and orchestra; study of the history of orchestration. *Prerequisite:* MUCO 236.

MUCO 337ab Composition II (4, Fa; 4, Sp) Continuation of MUCO 237; composition in larger forms. *Prerequisite:* MUCO 237b.

MUCO 338x Elementary Orchestration (2, Fa) Range, techniques, timbre, transposition of orchestral instruments; exercises in orchestration. Not available for credit to Composition majors. *Recommended preparation:* MUCO 233b.

MUCO 339 Orchestration Review (1, FaSm) Review of materials covered in elementary orchestration; for students whose entrance examination in orchestration indicates a need for further study.

MUCO 341 Counterpoint Review (1, SpSm) Review of materials covered in tonal counterpoint. For students whose entrance examination in counterpoint indicates the need for further study. For graduate students only.

MUCO 360 Music Notation and Copying (1) Development of skills in music calligraphy.

MUCO 370ab Arranging for the Recording Media (2-2) Arranging and composing for studio recording ensembles.

MUCO 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

MUCO 406ab Contemporary Notation (2-2) Notating new music; study and comparison of representative scores.

MUCO 425 Instrumental Music of Debussy and Ravel (2) Critical examination of the piano, chamber, and orchestral scores; comparison of styles, techniques and aesthetics of these "Impressionist" composers. *Prerequisite:* MUCO 336a or MUCO 338x; MUHL 331; MUHL 332.

MUCO 432ab Advanced Theory (1 or 2; 1 or 2) Special problems in music theory.

MUCO 434 Analytical Techniques (2) Selected analytical topics. *Prerequisite:* MUCO 232b, MUCO 233b.

MUCO 435 Counterpoint III (2, Fa) Canon and fugue; 19th and 20th century developments. *Prerequisite:* MUCO 235.

MUCO 436 Orchestration III (2, Sp) Continuation of Orchestration II. *Prerequisite:* MUCO 336ab.

MUCO 437ab Composition III (2-2, FaSp) Individual instruction in composition; preparation for senior recital. Not intended for SMPTV students. *Prerequisite:* MUCO 337b.

MUCO 438 Arranging for Marching Band (2) Fundamental concepts; instrumental capabilities; notation; color and scoring; modulation; percussion writing. *Prerequisite:* MUCO 336b or MUCO 338x.

MUCO 439 Band Arranging (2, max 4) Characteristics and use of individual instruments; writing for separate choirs; chamber and solo writing; scoring piano, organ, and orchestral music for band. *Prerequisite:* MUCO 237b, MUCO 336b or MUCO 338x.

MUCO 440ab Composition for Films and Television (2-2) Planning, timing, composing, and orchestrating music for dramatic and documentary films and television programs. *Prerequisite:* MUCO 336b or MUCO 338x, MUCO 337b.

MUCO 441 Choral Arranging (1-2, max 4, FaSpSm) Arranging and composing for chorus. *Prerequisite:* MUCO 233b.

MUCO 442ab History of Film Music Scoring (a: 2, Fa; b: 2, Sp) A comprehensive survey of the craft of composing music for motion pictures and television, combining film music history and score analysis, geared specifically to composers. Open only to students in the Advanced Studies Certificate Program in Scoring for Motion Pictures and Television and the B.M. in Composition (Film Scoring).

MUCO 443ab Film Score Analysis and Preparation (2-2, FaSp) Applied techniques in film music analysis and preparation for scoring.

MUCO 470 Electroacoustic Composition (2) Electronic music for the composer: history of means and styles, aesthetic issues and practical problems, computer usages, bibliography and repertoire. *Recommended preparation:* MTEC 474a.

MUCO 490x Directed Research (1-8, max 12) Individual research and readings. Not available for graduate credit.

MUCO 499 Special Topics (2-4, max 8) Selected topics of current interest.

MUCO 501 Introduction to the Analysis of Tonal Music (2, FaSp) Survey of common practice period (1650–1900) approaches to phrase design, tonal organization and type-forms (binary, ternary, rondo, sonata).

MUCO 502 Introduction to the Analysis of Post-Tonal Music (2, FaSp) Introductory survey of 20th/21st century approaches to the organization of pitch (serial, modal, extended tonal, etc.), rhythm, texture and form.

MUCO 520 Composition Forum (1, max 2, FaSp) Graded CR/NC.

MUCO 521x Composition for Non-Majors III (1-2, max 8, FaSpSm) Individual instruction in composition. Not open to graduate students in composition. *Prerequisite:* submission of portfolio of musical compositions.

MUCO 522ab Sketching and Scoring for Film and TV (2-2, FaSp) Applying techniques of music composition, orchestration and conducting towards creating original dramatic scores for film and TV.

MUCO 523ab Advanced Application of Film Music Technology (2-2, FaSp) Applying advanced state of the art technologies to the art of film music, including synthesizers, samplers, digital audio workstations and hard disk recording.

MUCO 533ab Analytical Approaches to Tonal Music (2-2, FaSp) *a:* Introducing to essential structural and prolongational aspects of Schenkerian theory. *b:* Application of the Schenkerian methods to individual movements and short pieces. *Prerequisite:* MUCO 501.

MUCO 536 Advanced Orchestration I (1 or 2, max 4, FaSp) Continuation of Orchestration III with emphasis on contemporary techniques. *Prerequisite:* MUCO 436b.

MUCO 537 Advanced Composition I (1 or 2, max 8) For graduates with evidence of preparation for advanced work. *Prerequisite:* MUCO 437b.

MUCO 538ab Analytical Approaches to Post-Tonal Music from 1908–1950 (2-2, FaSp) *a:* The breakdown of tonality, rise of atonal/pantonal pitch organization, new and extended approaches to tonality, modality. *b:* Continuation of 538a; twelve-tone methods, just tuning systems, new approaches to rhythm, texture, timbre. *Prerequisite:* MUCO 502.

MUCO 539ab Theoretical and Aesthetic Issues in Music from 1950 to the Present (2-2, FaSp) *a:* Anti-rationality and indeterminacy, ultra-rationality and integral serialism, new performance procedures, electronic music and new technologies, minimalism. *b:* Post-modernism of reaction, post-modernism of resistance, mannerist minimalism, anti-modernism. *Prerequisite:* MUCO 502.

MUCO 540ab Composing Music for Games (a: 2, Fa; b: 2, Sp) Applied techniques of music composition to video games. Includes conceptual and technical details which differentiate scoring for games.

MUCO 545 Individual Instruction in Advanced Film Music Composition (2, max 4, FaSp) Private instruction in composition and conducting for film and television.

MUCO 548 Writer and Composer (3, Sp) Structured collaboration among composers and poets. Activities include fundamentals of poetry, comparative analysis, creative projects. Open to Literature and Creative Writing and Composition majors only; students with other majors require departmental approval.

MUCO 550 Teaching Music Theory (2) Comparative study of curricula, text materials, and teaching strategies in music theory.

MUCO 560ab Music Editing for Film (2-2, FaSp) Develop and implement state of the art techniques in joining music and film.

MUCO 571 Comparative Analytical Studies: Traditional Forms (2, max 6, FaSpSm) Analytical survey of the development of a specific form or genre. Specific emphasis to be determined by the department. *Recommended preparation:* MUCO 501.

MUCO 572 Comparative Analytical Studies: 20th/21st Century and Non-Traditional Forms (2, Irregular) In-depth analysis of characteristic forms and genres of 20th century music or of other forms and genres that do not figure largely in the "common practice" tradition. Specific emphasis to be determined by the department. *Prerequisite:* MUCO 501.

MUCO 573 Special Studies in Contrapuntal Music (2, Irregular) In-depth analytical and historical study of contrapuntal techniques and styles. Emphasis to be determined by the department. *Prerequisite:* MUCO 501.

MUCO 574 Special Studies in Tonal Analysis (2, max 6, FaSpSm) Analytical study of major composers and/or problems in tonal music. Emphasis to be determined by the department. *Recommended preparation:* MUCO 501.

MUCO 575 Special Studies in Post-Tonal Analysis (2, max 6, FaSpSm) Analytical study of major composers and/or problems in post-tonal music. Emphasis to be determined by the department. *Recommended preparation:* MUCO 502.

MUCO 576 Special Studies in Musical Aesthetics (2, Irregular) An investigation of aesthetics in general and the application of aesthetic theories to music; readings will be selected from pre-modern, modern, and post-modern texts. *Prerequisite:* MUCO 501, MUCO 502.

MUCO 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MUCO 592 Selected Topics in Graduate Composition (2, max 8, Irregular) Seminar for graduate students in composition that addresses aesthetic, technical and analytical issues from a composer's perspective. Open only to Composition majors.

MUCO 594abz Master's Thesis (2-2-0) Credit on acceptance of thesis. Graded IP/CR/NC.

MUCO 599 Special Topics (2-4, max 8) Seminars in selected areas of study.

MUCO 633ab Advanced Analysis of Tonal Music (2-2) *a:* Application of Schenkerian techniques to large works. *b:* Criticisms and extensions of Schenker, semi-otic approaches, theories of rhythmic structure. *Prerequisite:* MUCO 533b.

MUCO 636 Advanced Orchestration II (1 or 2, max 4, FaSp) Continuation of Advanced Orchestration I with emphasis on historical survey of orchestral compositions and advanced orchestration projects. *Prerequisite:* MUCO 536.

MUCO 637 Advanced Composition II (1 or 2, max 4) Continuation of MUCO 537. For students holding the M.M. degree in composition. *Prerequisite:* MUCO 537.

MUCO 737 Advanced Composition III (1 or 2, max 8) Continuation of MUCO 637. *Prerequisite:* MUCO 536, MUCO 637.

MUCO 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MUCO 794abcdz Doctoral Dissertation (2-2-2-2-0) Credit on acceptance of dissertation. Graded IP/CR/NC.

CONDUCTING (MUCD)

MUCD 301 Individual Instruction (1-2, max 16, FaSpSm) Intermediate and advanced instruction secondary emphasis for music majors and minors. (Duplicates credit in former MUCD 401.)

MUCD 340 Choral Conducting I (2) Basic conducting techniques; score analysis; conducting patterns; problems of tempo, dynamics, articulation and text. Laboratory, 3 hours. *Prerequisite:* ability to read a music score.

MUCD 343 Instrumental Conducting I (2, FaSp) Communicating musical ideas to instrumental ensembles; reading and conducting from full score of orchestral compositions. Laboratory, 3 hours. *Prerequisite:* ability to read a music score.

MUCD 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

MUCD 441 Choral Conducting II (2) Refinement of techniques developed in MUCD 340; study of styles and interpretations of choral music from the Renaissance to the present. Laboratory, 3 hours. *Prerequisite:* MUCD 340, MUCD 343.

MUCD 443 Instrumental Conducting II (2, FaSpSm) Principal composers and representative instrumental works since the 18th century; studies of styles and interpretations based on scores and the performance of works in class.

MUCD 490x Directed Research (1-8, max 12) Individual research and readings. Not available for graduate credit.

MUCD 499 Special Topics (2-4, max 8) Selected topics of current interest.

MUCD 501 Individual Instruction (1 or 2, max 8, FaSpSm) Secondary instruction for graduate music majors or instruction for graduate non-music majors.

MUCD 541 Choral Conducting III (2, max 6) Problems of preparing and conducting contemporary choral music and major choral-orchestral works from full score; special projects according to student's development and interests. Laboratory, 3 hours. *Prerequisite:* MUCD 441.

MUCD 543 Instrumental Conducting III (2, max 4, FaSp) Problems in advanced conducting. *Prerequisite:* MUCD 443.

MUCD 550 Orchestral Conducting Seminar (2, max 8, FaSp) Advanced instrumental conducting techniques. Literature drawn from music of all periods. *Prerequisite:* MUCD 441, MUCD 443, and admission as candidate for M.M. degree in conducting.

MUCD 553 Individual Instruction (1 or 2, max 8, FaSpSm)

MUCD 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MUCD 599 Special Topics (2-4, max 8) Selected topics of current interest.

MUCD 641 Choral Conducting IV (2, max 8) Continuation of MUCD 541, including choral conducting pedagogy. *Prerequisite:* MUCD 541.

MUCD 653 Performance (1 or 2, max 12, FaSpSm) Individual or master class instruction for DMA Performance majors. (Duplicates credit in former MUPF 653.)

MUCD 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MUSIC TECHNOLOGY (MTEC)

MTEC 105 Electronic Studio Techniques (2) Electronic Music procedures in a multi-track studio. Computer applications. (Duplicates credit in former MUEA 105.)

MTEC 174 Fundamentals of Music Technology (2) Introductory microphone technique, signal processing, and computer literacy for musical performers. (Duplicates credit in former MUEA 174.)

MTEC 205ab Music with Computers (4-4) Computers in music composition, realization and performance. Representative hardware, software and languages. (Duplicates credit in former MUEA 205ab.) *Recommended preparation:* MTEC 105.

MTEC 301 Individual Instruction (1, 2, max 16, FaSp) Intermediate and advanced instruction in the applications of technology to the creation and performance of music. *Recommended preparation:* experience with audio recording and synthesizers.

MTEC 305ab Electroacoustic Media I (4-4) Composition, arranging, performance and/or fixed medium realization of electroacoustic music. Critical/analytic listening. History of the medium. (Duplicates credit in former MUEA 305ab.) *Prerequisite:* MTEC 205b.

MTEC 310 Computer Recording for the Performing Musician (2, FaSpSm) Fundamentals of computer music production for music students. Recording and editing multitrack digital audio using computer software. Open to music majors only, with the exception of majors in music industry. (Duplicates credit in former MUSC 310.)

MTEC 311 MIDI Music Production for the Performing Musician (2, FaSpSm) Techniques of sequencing and recording musical compositions via MIDI on personal computers. Includes study of hardware, software, processes, functions, editing and orchestration techniques. Not open to music industry majors. (Duplicates credit in former MUSC 311.)

MTEC 390 Special Problems (1-4, FaSpSm) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only. (Duplicates credit in former MUEA 390.)

MTEC 405ab Electroacoustic Media II (4-4) Continuation of MTEC 305ab. (Duplicates credit in former MUEA 405ab.) *Prerequisite:* MTEC 305b.

MTEC 448 Computer Music Notation and Preparation (2) Techniques and principles of computer music notation including conventions of music notation, idiomatic practices, preparation of significant score types, and MIDI basics. (Duplicates credit in former MUIN 448.)

MTEC 474abx Electronic Synthesizer Techniques (2-4; 2-4, FaSpSm) *a* and *b*: Electronic music procedures in a multi-track studio. *b*: Computer applications. (Duplicates credit in former MUEA 474abx.)

MTEC 476ab Advanced Electronic Studio Techniques (2-4; 2-4) *a*: Digital devices and specialized audio processing modules applied to electronic music. (Duplicates credit in former MUEA 476a.) *Prerequisite*: MTEC 474b. *b*: Continuation of MTEC 476a. Emphasis on individual projects. (Duplicates credit in former MUEA 476b.)

MTEC 481 Programming the MIDI Interface (2, FaSpSm) Programming MIDI Interface Software using the C Programming Language. Developing original applications software for sequencing and real-time event processing. (Duplicates credit in former MUEA 481.) *Recommended preparation*: prior experience in electronic music or computers.

MTEC 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit. (Duplicates credit in former MUEA 490x.)

MTEC 499 Special Topics (2-4, max 8, FaSpSm) Selected topics of current interest. (Duplicates credit in former MUEA 499.)

MTEC 501 Individual Instruction (1, 2, max 8, FaSp) Intermediate and advanced instruction in the applications of technology to the creation and performance of music. *Recommended preparation*: experience with audio recording and synthesizers.

MTEC 550 Technology and the Collegiate Music Curriculum (2) Prepares the college-level music instructor for assuming a technological leadership role within a music department. Examines traditional, experimental, and pedagogical aspects of technology. *Recommended preparation*: computer, Internet, and basic music software literacy.

MTEC 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC. (Duplicates credit in former MUEA 590.)

MTEC 599 Special Topics (2-4, max 8) Selected topics of current interest.

MTEC 790 Research (1-12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC. (Duplicates credit in former MUEA 790.)

JAZZ STUDIES (MUJZ)

MUJZ 100mx Jazz: America's Music (4) Music of the jazz greats. Experience through live performances, field trips, readings, recordings, videos and guest lectures. Not available for credit to jazz studies majors.

MUJZ 101x Non-Major Beginning Individual Instruction (1-2, max 2, FaSpSm) Individual instruction at the beginning level designed for non-music majors with no previous experience. Not available for credit to music majors.

MUJZ 105ab Jazz Theory (2-2, FaSp) Study of basic and advanced concepts of jazz melody, harmony and form. Includes functional chord idioms and relationships, compositional and improvisational devices, and song forms.

MUJZ 141ab Basic Keyboard Skills for the Improviser (2-2, FaSp) Reading skills related to jazz accompanying, including the ability to identify and play chords on the piano utilizing different voicings.

MUJZ 142ab Jazz Ear Training (2-2, FaSp) Sight-singing and melodic/rhythmic reading and dictation applied to jazz repertoire. Includes vocalization of scales and chord patterns and study of rhythmic reading and jazz articulation.

MUJZ 150x Beginning Jazz Improvisation (2, max 4, FaSp) Development of beginning improvisational skills, including modal and the ii-V7-I chord progression, through instrumental performance. Recommended to non-jazz majors. Not available for credit to jazz studies majors. *Recommended preparation*: demonstration of major scales of eighth notes at a tempo of 120 mm.

MUJZ 153 Individual Instruction (1-2, max 8, FaSpSm) Weekly individual instruction and performance forum. Open only to jazz studies majors.

MUJZ 180 Techniques of Jazz Improvisation (2, max 4) Development of improvisational skills through instrumental performance.

MUJZ 195L Jazz Elements I (2, max 8, FaSp) Study of compositional, improvisational, performance, and arranging elements found in jazz. Students will model influential groups and jazz artists.

MUJZ 196 Jazz Combo I (2, max 8, FaSp) Rehearsal and performance of literature for jazz chamber groups. Graded CR/NC. (Duplicates credit in MUEN 332.)

MUJZ 200ab Jazz Styles Analysis (2-2) Theoretical skills and analytical techniques related to jazz styles from Dixieland to the present. *a*: Styles through Progressive Swing; *b*: Bebop to the present. (Duplicates credit in former MUCO 200ab.)

MUJZ 218ab Afro-Latin Percussion Instruments (2-2) Instruction in the performance of percussion instruments associated with African, South American, and Caribbean music traditions, with special emphasis on adaptation to jazz music.

MUJZ 252 Individual Instrument Performance Class I (1, max 4, FaSp) Solo and orchestra repertoire, professional preparation, reed making, and other matters appropriate to group study. Required of all first and second year wind and percussion majors each semester in residence.

MUJZ 253 Individual Instruction (1-2, max 8, FaSpSm) Weekly individual instruction and performance forum. Open only to jazz studies majors.

MUJZ 286ab The History of Jazz (3-3, FaSp) A study of the evolution of American jazz music from its roots in Africa to the present day. Includes an introduction to world music elements. *Prerequisite*: MUJZ 105b, MUJZ 142b.

MUJZ 300x Non-Major Individual Instruction (1-2, max 16, FaSpSm) Intermediate and advanced instruction designed for non-music majors. Not available for credit to music majors. (Duplicates credit in former MUJZ 201 and MUJZ 401.)

MUJZ 301 Individual Instruction (1-2, max 16, FaSpSm) Intermediate and advanced instruction: secondary emphasis for music majors, principal emphasis for music minors and B.A. music majors. Open only to music majors and minors. (Duplicates credit in former MUJZ 201 and MUJZ 401.)

MUJZ 305ab Advanced Jazz Theory (2-2, FaSp) Analysis and transcription of jazz performances and scores, encompassing questions of style, form, harmonic and melodic language, and considerations of rhythm. *Prerequisite*: MUJZ 105b, MUJZ 142b.

MUJZ 311 Vocal Jazz Techniques (2, max 4) Development of skills needed for the professional vocal jazz musician. Study of the standard jazz repertoire, vocal improvisation, lead sheet writing, and working with rhythm sections. *Prerequisite*: MUJZ 180.

MUJZ 341 Keyboard Skills for Improvisers (2) Reading skills related to jazz accompanying; "fake" books, chord progressions commonly used in jazz. *Prerequisite*: MPKS 250ab.

MUJZ 342ab Aural Skills for Improvisers (1-1, FaSp) Sight-singing and dictation applied to jazz repertoire. Vocalization of modal and synthetic jazz scales and chordal qualities. (Duplicates credit in former MUCO 342ab.) *Prerequisite*: MUCO 132b.

MUJZ 347 Jazz Composition (2, max 4) Composing in the jazz medium. (Duplicates credit in former MUCO 347.)

MUJZ 353 Individual Instruction (1-2, max 8, FaSpSm) Weekly individual instruction and performance forum. Open only to jazz studies majors.

MUJZ 390 Special Problems (1-4, Irregular) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

MUJZ 395 Jazz Elements II (2, max 8, FaSp) Advanced study of compositional, improvisational, performance, conducting, and arranging elements found in the jazz repertoire. Students will be encouraged to forge individual musical expressions. Open to juniors and seniors only. *Prerequisite:* MUJZ 195.

MUJZ 396 Jazz Combo II (2, max 8, FaSp) Preparation and performance of literature for jazz combos. Open to juniors and seniors only. Graded CR/NC. *Prerequisite:* MUJZ 195.

MUJZ 400 Arranging for Jazz Ensemble (2) Scoring for jazz ensemble with emphasis on writing for sections of like and mixed instruments as well as full ensemble. (Duplicates credit in former MUCO 400.)

MUJZ 403 Studio Singing Techniques (2, FaSp) Study of technique, theory and aural skills as applied to studio singing; critical listening; study of various styles; ear training and sight singing as these apply to working in a studio. *Recommended preparation:* jazz background; can read music and sing well.

MUJZ 419m The Jazz Experience: Myths and Culture (4, FaSp) An examination of the music, culture, and mythology of jazz revealed through the study of jazz fiction, film, poetry, and recorded examples.

MUJZ 443 Jazz Pedagogy (2, 2 years, Sp) Concepts, methods, and resources; examination and comparison of textbooks, recordings, tapes, and materials related to the study and teaching of jazz. (Duplicates credit in former MUED 443.)

MUJZ 450 Intermediate Jazz Improvisation (2, max 4, Sp) Development of intermediate jazz improvisational skills, starting with dominant seventh chords and progressing through the minor ii-V7-I chord progression. Not open to Jazz Studies majors. *Prerequisite:* MUJZ 150x.

MUJZ 451 Advanced Jazz Improvisation (2, max 4, Sp) Development of advanced improvisational skills, including Lydian-chromatic and bi-modal techniques, through instrumental performance. Junior standing.

MUJZ 452 Individual Instrument Performance Class II (1, max 4, FaSp) Solo and orchestra repertoire, professional preparation, reed making, and other matters appropriate to group study. Required of all third and fourth year wind and percussion majors each semester in residence.

MUJZ 453 Individual Instruction (1-2, max 8, FaSpSm) Weekly individual instruction and performance forum. Open only to jazz studies majors.

MUJZ 486 Jazz Masters from World War II to the Present (2) Examination of major jazz artists from World War II to the present with emphasis on the innovators of each period. Detailed analysis of selected repertoire. (Duplicates credit in former MUHL 486.) *Recommended preparation:* MUJZ 419.

MUJZ 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

MUJZ 499 Special Topics (2-4, max 8) Selected topics of current interest.

MUJZ 501 Individual Instruction (1 or 2, max 8, FaSpSm) Secondary instruction for graduate music majors or instruction for graduate non-music majors.

MUJZ 545 Jazz Ensemble Development (2, 2 years, Sp) Techniques, approaches, teaching materials, and music useful in developing jazz ensembles in educational settings, from junior high school through college. (Duplicates credit in former MUED 547.)

MUJZ 547 Jazz Composition (2, max 4, Fa) Application of theoretical and compositional techniques used in jazz to written music. Analysis and performance of historical and contemporary examples will be included. (Duplicates credit in former MUCO 547.)

MUJZ 551 Graduate Jazz Improvisation (2, Sp) Development of proficiency in improvising to advanced jazz concepts, including transposition, substitute harmony, superimposed harmony, atypical harmonic schemes and contemporary chord and scale types. Open to jazz studies and studio guitar majors only. *Prerequisite:* MUJZ 451.

MUJZ 553 Individual Instruction (1 or 2, max 8, FaSpSm)

MUJZ 554 Graduate Certificate Performance (4, max 16, FaSpSm) Individual instruction and related lab participation for Graduate Certificate students.

MUJZ 588 Special Studies in Jazz Performance (2, max 6) Performance problems, composers and/or stylistic analysis of music from the jazz idiom. Specific emphasis to be determined by the Jazz Studies department.

MUJZ 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MUJZ 599 Special Topics (2-4, max 8) Selected topics of current interest.

MUJZ 653 Performance (1 or 2, max 12, FaSpSm) Individual or master class instruction for DMA Performance majors.

MUJZ 688 Special Topics in Jazz Performance (2, max 4, Fa) Examination and analysis of solo and compositional repertoire of the jazz idiom through transcription and comparative research. Specific emphasis to be determined by the Jazz Studies department.

MUJZ 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MUSIC EDUCATION (MUED)

MUED 330x Fundamentals of Music (4, FaSp) Introduction to the content of music through an investigation of its melodic, rhythmic, and harmonic structure. Not available for credit to music majors.

MUED 390 Special Problems (1-4, FaSp) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

MUED 402 Teaching Choral Music (2, Sp) Problems of school choral organizations; the changing and adolescent voice; appropriate repertoire and materials. *Corequisite:* MUED 340 or MUED 343.

MUED 403 Teaching Instrumental Music (2, Sp) Problems of school instrumental organizations; teaching wind, string, and percussion instruments; appropriate repertoire and materials.

MUED 420 Teaching Beginning Improvisation (2, Irregular) Strategies for teaching beginning improvisation in K-12 music classes; includes playing/singing and teaching in many styles. No improvisation experience necessary.

MUED 440ab Music and Movement: The Orff Approach (2-2) Orff Schulwerk techniques in rhythmic and melodic training through speech, singing, body percussion, playing Orff instruments, improvisation, and elemental movement. Certification available.

MUED 443 Teaching Vocal Jazz (2) Strategies for teaching the principles of vocal jazz; historical perspective, repertoire, recordings, improvisation, scat, accompaniment, amplification, rehearsing, teaching sequences. No prior jazz experience necessary. (Duplicates credit in former MUED 530.)

MUED 449 Teaching Marching Band (2, Fa) Modern school marching band techniques; precision drill; administration; rehearsal techniques.

MUED 452 Introduction to Technology in Music Education (2, Fa) Applications of computers and electronic music to music education; survey of current approaches and materials.

MUED 479x Music for the Elementary Classroom Teacher (2, FaSp) The nature and structure of music, its processes, and its notational symbols. Not available for credit to music majors. *Recommended preparation:* MUED 330.

MUED 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

MUED 499 Special Topics (2-4, max 8, Irregular) Selected topics of current interest reflective of changing trends in music education.

MUED 500 Research Foundations in Music Education (3, Fa) Introductory exploration of types of research linked to research literature in music education; interpreting and organizing research proposals and reports.

MUED 501 Historical Foundations of Music Education (3) A contextual exploration of the historical development of American music education.

MUED 502 Sociological Foundations of Music (3) Study of interdependent relationship between society, music and music education.

MUED 503 Philosophical Foundations of Music Education (3) Exploration of philosophical thinking in the field of music with emphasis on philosophical foundations for teaching and learning.

MUED 504 Psychological Foundations of Music (3) Exploration of theories, research and practice in psychological foundations of music teaching and learning.

MUED 505 Teaching and Learning Music (2, Irregular) Studies of the latest resources concerning the teaching and learning of music so that musicians can function more effectively as both teachers and performers.

MUED 510 Leading a Music Program in a Public School Setting (2, Sm) The philosophy and purposes of music programs combined with early field experiences, varied teaching strategies, and music learning assessment.

MUED 515 Using Technology in the Classroom (2, Sm) Study of the tools and knowledge necessary to the music educator to facilitate the application of computers and electronic music in music education.

MUED 520 Early Childhood Music (2, Irregular) An overview of significant developmental issues, current research, and appropriate practices for children from birth to age eight. Professor-guided practicum teaching.

MUED 522ab Teaching Public School Instrumental Music (a: 3, Fa; b: 2, Sp) Methods and materials appropriate for teaching and modeling instrumental lessons and instruction in the public and private schools.

MUED 524 Teaching and Conducting Public School Instrumental Ensembles (4, Sp) Study of the methods and materials needed to rehearse an instrumental ensemble in K-12 settings. Includes conducting and rehearsal techniques, literature selection, score analysis.

MUED 526 Teaching General/Choral Music for Instrumentalists (2, Sp) Study of psychomotor and cognitive learning in K-12 classes. Vocal/choral music in classroom settings; techniques and repertoire for use in K-12 choirs.

MUED 532 Teaching General Music K-8 (4, Fa) Methods and materials for cognitive learning and development of music skills in K-8 music classes, featuring Orff, Kodaly, and Dalcroze approaches.

MUED 534 Teaching and Conducting Public School Choral Ensembles (4, Sp) Comprehensive consideration of the choral music program in grades K-12. Topics include: development and care of the voice, audition and rehearsal techniques, conducting, lesson planning.

MUED 536 Teaching Instrumental Music for Vocalists (2, Sp) An introduction to the pedagogical and acoustic aspects for woodwind, brass, string and percussion instruments. Includes hands-on performance, class discussion and practical application.

MUED 540 Motivation and Discipline in the Music Classroom (2, Sp) An examination of the current research into learning theories and motivation with emphasis on the application of these theories to the music classroom.

MUED 542 Orchestra Development (2, Irregular) Repertoire and rehearsal techniques appropriate for school and community orchestras useful in solving specific problems of technical and tonal growth. *Prerequisite:* MUCD 343.

MUED 545 String Class Pedagogy (2, Irregular) Approaches to beginning through intermediate string class instruction in school and other group setting derived from principles of Suzuki, Bornoff, Rolland, and other leading teachers. *Prerequisite:* MUED 345aBL.

MUED 546 Wind Band Pedagogy (2, 2 years, Fa) Methods and materials relevant to current trends in wind band pedagogy; development of comprehensive pedagogical and performance practices; appropriate wind band music survey. *Prerequisite:* MUCD 343.

MUED 547 Vocal Pedagogy in the Public School Classroom (2, Sp) Development of technical knowledge, tone production, and performance skills for voice appropriate for public school music teaching.

MUED 548 Orchestral Bowing (2, Irregular) Introduction to bowing function and style with application to typical repertoire; practical experience for teachers and conductors in educational and community settings.

MUED 549ab Directed Teaching: Public School Music (2-2) Observation and teaching under the guidance of a university supervisor and a directing teacher. Open only to MAT, Single Subject (Music Education) majors.

MUED 550 Teaching Music Fundamentals and Appreciation Courses (2, 2 years, Fa or Sp) Purpose and objectives of music in general education. Survey of current approaches and materials.

MUED 552 Music Education Courseware Development (2, Sp) Development of music education courseware using current technology. Two lecture hours per week. *Prerequisite:* MUED 452.

MUED 555 Entering the Music Professoriate (3, Fa) Preparation for academic careers in music. Methodologies and approaches to teaching, learning, and assessment; statements of teaching philosophies; creation of academic portfolio. Open only to doctoral students (DMA and Ph.D.) in the Thornton School of Music.

MUED 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MUED 592 Final Project (2, max 2) Required for the Master of Music Education degree. Credit upon acceptance. Graded CR/NC. *Prerequisite:* MUED 500.

MUED 594abz Master's Thesis (2-2-o, FaSpSm) Credit on acceptance of thesis. Graded IP/CR/NC.

MUED 599 Special Topics (2-4, max 8, Irregular) Selected topics of current interest reflective of changing trends in music education.

MUED 601 Field Seminar in Elementary School Music Education (2, 2 years, Fa or Sp) Observation in schools. Identification and analysis of problems; strategies for improvement; alternative approaches including those of Orff and Kodaly. Readings, examination of teaching materials.

MUED 602 Field Seminar in Choral Music Education (2, 2 years, Fa or Sp) Observation in schools. Current practice; identification and analysis of problems; strategies for improvement; readings, examination of music and teaching materials.

MUED 603 Field Seminar in Instrumental Music Education (2, 2 years, Fa or Sp) Observation in schools. Identification and analysis of problems; strategies for improvement. Readings, examination of music and teaching materials.

MUED 604 Preparing School Music Teachers (2, 2 years, Fa or Sp) Analysis of best practices in teacher training; faculty, curriculum, schedule, materials, methods, and supervision of directed teaching. *Prerequisite:* three years of teaching music in public schools or two years of college teaching.

MUED 605 College Teaching in Music Education (3) Exploration of music education faculty duties at the collegiate level, including teacher training, working with local school systems, leading professional organizations, and conducting research.

MUED 606 Internship in Collegiate Music Education (3) Students intern with USC professors in training music teachers in traditional and alternative music education practices.

MUED 607 Alternative Models in Music Education (3) Examination of diverse, evolving settings for music teaching and learning in contemporary society. Emphasis on programming and administrative structures of community-based music providers.

MUED 610 Pedagogy for Collegiate Teaching (2, FaSpSm) A preparation for teaching in the modern university environment, examining the role of the professor, and focusing on the development of innovative collegiate teaching skills.

MUED 640 Research and Practice in Orff Schulwerk (2, Sp) Exploring research on the philosophical and historical bases of the Orff Schulwerk approach and acquiring skills in pedagogical applications in early childhood through collegiate settings.

MUED 650 Pedagogy for Collegiate Music Appreciation and Fundamentals (2, Sp) Design and teaching strategies for collegiate music appreciation and fundamentals classes developed for the adult, non-music major student.

MUED 790 Research (1-12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MUED 791 Pedagogical Writing and Media in Music Education (3) Development of skills in pedagogical writing for professional journals, text books, and multimedia publications, and knowledge of publishing procedures for compositions and arrangements.

MUED 792 Quantitative Research in Music Education (3) Survey of theories, concepts and procedures for designing and evaluating quantitative research studies. *Prerequisite:* MUED 500.

MUED 793 Qualitative Research in Music Education (3) Survey of theories, concepts and procedures for designing and evaluating qualitative research studies. *Prerequisite:* MUED 500.

MUED 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC.

MUSIC ENSEMBLE (MUEN)

Large ensemble requirements in undergraduate curricula must be fulfilled by the following ensembles: University Chorus (MUEN 307); Men's Chorus (MUEN 308); Oriana Choir (MUEN 311); University Concert Choir (MUEN 310); Chamber Choir (MUEN 312); USC Symphony (MUEN 320); USC Concert Orchestra (MUEN 321); University Wind Ensemble (MUEN 323); or University Band (MUEN 324).

Exceptions to the above policies include: Contemporary Music Ensemble and Early Music Ensemble may fulfill the large ensemble requirement for instrumental majors, with the approval of the conductor of University Symphony or Wind Ensemble and the chair of the student's major department.

Music Education majors with an instrumental emphasis must take one semester of a choral ensemble.

Composition majors must register for at least 2 units in a choral ensemble.

Students majoring in Strings, Vocal Arts, or Wind and Percussion may not count USC Concert Orchestra toward their large ensemble requirement.

Vocal Arts majors must register for University Concert Choir, USC Chamber Choir, or USC Oriana Choir to fulfill their large ensemble requirement.

Further exceptions may be made subject to departmental approval and approval of the conductor of the appropriate large ensemble.

MUEN 222 Trojan Marching Band (1, max 4) Rehearsal and participation in performances for athletic and other university functions. Graded CR/NC. Open to all students by audition.

MUEN 305 Vocal Jazz Ensemble (1, max 8, FaSp) Study and performance of vocal ensemble literature from the Jazz idiom, with emphasis on improvisational techniques. Open to all students by audition. Graded CR/NC.

MUEN 307 University Chorus (1, max 8, FaSp) Rehearsal and performance of choral literature from all periods of music history. Open to all students. Graded CR/NC.

MUEN 308 USC Men's Chorus (1, max 8, FaSp) Rehearsal and performance of choral repertoire from all periods written for male voices. Open to all students. Graded CR/NC.

MUEN 310 University Concert Choir (1, max 8, FaSp) Performance of choral works of all styles and periods. Open to all students by audition. Graded CR/NC.

MUEN 311 USC Oriana Choir (1, max 8, FaSp) Rehearsal and performance of advanced chamber music written for women's voices. Open to all students by audition. Graded CR/NC.

MUEN 312 USC Chamber Choir (1, max 8, FaSp) Performance of vocal chamber music and choral masterworks from the 16th century to the present. Open to all students by audition. (Duplicates credit in former MUEN 212 and MUEN 412.) Graded CR/NC.

MUEN 314 Opera Chorus (1, max 8, FaSp) Study and performance of operatic choruses and extended ensembles of all styles and periods. Open to all students by audition. (Duplicates credit in former MUEN 214 and MUEN 414.) Graded CR/NC.

MUEN 320 USC Symphony (1, max 8, FaSp) Rehearsal and performance of orchestra repertoire. Open to all students by audition. (Duplicates credit in former MUEN 220 and MUEN 420.) Graded CR/NC.

MUEN 321 USC Concert Orchestra (1, max 8, FaSp) Rehearsal and performance of orchestra repertoire. Open to all students, faculty, staff, and members of the community. Audition not required. Graded CR/NC.

MUEN 322 Trojan Marching Band (1, max 4) Continuation of MUEN 222. Graded CR/NC.

MUEN 323 University Wind Ensemble (1, max 8, FaSp) Rehearsal and participation in concert programs. Open to all students by audition. (Duplicates credit in former MUEN 223 and MUEN 423.) Graded CR/NC.

MUEN 324 University Band (1, max 8, FaSp) Rehearsal and performance of standard repertoire. Open to all students by audition. Graded CR/NC.

MUEN 325 Wind and Percussion Chamber Music (1, max 8, FaSp) Performance of chamber music for wind and percussion instruments. Open to all students by audition. (Duplicates credit in former MUEN 225 and MUEN 425.) Graded CR/NC.

MUEN 326 Guitar Ensemble (1, max 8, FaSp) Rehearsal and performance of literature composed, transcribed and arranged for small ensembles, including literature for small ensembles of guitar and other instruments, as well as voice. (Duplicates credit in former MUEN 226 and MUEN 426.) Graded CR/NC.

MUEN 327 String Chamber Music (1, max 8, FaSp) Preparation and performance of small ensemble literature for strings. (Duplicates credit in former MUEN 227 and MUEN 427.) Graded CR/NC.

MUEN 328 Keyboard Collaboration (1, max 4, FaSp) Preparation and performance of literature for piano with voice and string, woodwind, brass and percussion instruments. (Duplicates credit in former MUEN 428.) Graded CR/NC.

MUEN 329 Jazz Ensemble (1, max 8, FaSp) Rehearsal and performance of literature written for large jazz ensemble. Open to all students by audition. (Duplicates credit in former MUEN 229 and MUEN 429.) Graded CR/NC.

MUEN 330 Contemporary Music Ensemble (1, max 8, FaSp) Performance of 20th-century music; readings of student and faculty compositions; experimental music; guest conductors, composers, performers; annual concert series. (Duplicates credit in former MUEN 230 and MUEN 430.) Graded CR/NC.

MUEN 331 Guitar Big Band (1, max 8, FaSp) Rehearsal and preparation of big band literature adapted for large guitar ensemble. Guitarists perform in place of the traditional trumpet, trombone and sax sections. Graded CR/NC.

MUEN 332 Jazz Chamber Music (1, max 8, FaSp) Preparation and performance of literature for jazz chamber groups. Open to all students by audition. (Duplicates credit in former MUEN 232 and MUEN 432.) Graded CR/NC.

MUEN 335 University Brass Band (1, max 8, FaSp) The study, rehearsal and performance of standard brass choir and brass band literature. (Duplicates credit in former MUEN 235 and MUEN 435.) Graded CR/NC.

MUEN 344 Vocal Chamber Music (1, max 8, Fa)

Study of solo ensemble vocal literature such as duets, trios, quartets, madrigals, etc. Open to all students by audition. (Duplicates credit in former MUEN 244 and MUEN 444.) Graded CR/NC.

MUEN 350 Early Music Ensemble (1, max 8, FaSp)

Rehearsal and performance of vocal and instrumental ensemble music of the Renaissance and Baroque, with emphasis on chamber music for solo voices and bowed and plucked strings. Instrumentalists are required to perform on either their own or the school's historical instruments. Open to all students by audition. (Duplicates credit in former MUEN 250 and MUEN 450.) Graded CR/NC.

MUEN 505 Vocal Jazz Ensemble (1, max 4, FaSp)

Study and performance of vocal ensemble literature from the Jazz idiom, with emphasis on improvisational techniques. Open to graduate students by audition.

MUEN 507 University Chorus (1, max 8, FaSp)

Rehearsal and performance of choral literature from all periods of music history. Open to all graduate students.

MUEN 508 USC Men's Chorus (1, max 4, FaSp)

Rehearsal and performance of choral repertoire from all periods written for male voices.

MUEN 510 University Concert Choir (1, max 4, FaSp)

Performance of choral works of all styles and periods. Open to all graduate students by audition.

MUEN 511 USC Oriana Choir (1, max 4, FaSp)

Rehearsal and performance of advanced chamber music written for women's voices. Open to all graduate students by audition.

MUEN 512 USC Chamber Choir (1, max 4, FaSp)

Performance of vocal chamber music and choral masterworks from the 16th century to the present. Open to all graduate students by audition. (Duplicates credit in former MUEN 412.)

MUEN 514 Opera Chorus (1, max 4, FaSp)

Study and performance of operatic choruses and extended ensembles of all styles and periods. Open to all graduate students by audition. (Duplicates credit in former MUEN 414.)

MUEN 520 USC Symphony (1, max 4, FaSp)

Rehearsal and performance of orchestra repertoire. Open to all graduate students by audition. (Duplicates credit in former MUEN 420.)

MUEN 521 USC Concert Orchestra (1, max 4, FaSp)

Rehearsal and performance of orchestra repertoire. Open to all graduate students. Audition not required.

MUEN 523 University Wind Ensemble (1, max 4, FaSp)

Rehearsal and participation in concert programs. Open to all graduate students by audition. (Duplicates credit in former MUEN 423.)

MUEN 525 Wind and Percussion Chamber Music (1, max 4, FaSp)

Performance of chamber music for wind and percussion instruments. Open to all students by audition. (Duplicates credit in former MUEN 425.)

MUEN 526 Guitar Ensemble (1, max 4, FaSp)

Rehearsal and performance of literature composed, transcribed and arranged for small ensembles, including literature for small ensembles of guitar and other instruments, as well as voice. (Duplicates credit in former MUEN 426.)

MUEN 527 String Chamber Music (1, max 4, FaSp)

Preparation and performance of small ensemble literature for strings. (Duplicates credit in former MUEN 427.)

MUEN 528 Keyboard Collaboration (1, max 4, FaSp)

Continuation of MUEN 328.

MUEN 529 Jazz Ensemble (1, max 4, FaSp)

Rehearsal and performance of literature written for large jazz ensemble. Open to all graduate students by audition. (Duplicates credit in former MUEN 429.)

MUEN 530 Contemporary Music Ensemble (1, max 4, FaSp)

Performance of 20th-century music; readings of student and faculty compositions; experimental music; guest conductors, composers, performers; annual concert series. (Duplicates credit in former MUEN 430.)

MUEN 531 Guitar Big Band (1, max 4, FaSp)

Rehearsal and preparation of big band literature adapted for large guitar ensemble. Guitarists perform in place of the traditional trumpet, trombone and sax sections.

MUEN 532 Jazz Chamber Music (1, max 4, FaSp)

Preparation and performance of advanced literature for jazz chamber groups. Open to graduate students, by audition.

MUEN 535 University Brass Band (1, max 4)

The study, rehearsal and performance of standard brass choir and brass band literature. (Duplicates credit in former MUEN 435.)

MUEN 544 Vocal Chamber Music (1, max 4, Fa)

Study of solo ensemble vocal literature such as duets, trios, quartets, madrigals, etc. Open to all graduate students by audition. (Duplicates credit in former MUEN 444.)

MUEN 550 Early Music Ensemble (1, max 4, FaSp)

Rehearsal and performance of vocal and instrumental ensemble music of the Renaissance and Baroque, with emphasis on chamber music for solo voices and bowed or plucked strings. Instrumentalists are required to perform on either their own or the school's historical instruments. Open to all graduate students by audition. (Duplicates credit in former MUEN 450.) Graded CR/NC.

MUEN 628 Keyboard Collaboration (1, max 4, FaSp)

Continuation of MUEN 328.

MUEN 650 Early Music Ensemble (1, max 8, FaSp)

Rehearsal and public performance of vocal and instrumental music of the Renaissance and Baroque era; emphasis is on large- and small-scale chamber works. Instrumentalists are required to perform on historical instruments.

MUSIC HISTORY AND LITERATURE (MUHL)**MUHL 231 Music History (3, Fa)**

A study of the musical styles and genres from antiquity to c. 1680 within their historical context. Detailed analysis of selected works. (Duplicates credit in MUHL 385a.) *Prerequisite:* MUCO 132b, MUCO 133b.

MUHL 232 Music History II (3, Sp)

A study of the musical styles and genres from c. 1680 to c. 1850 within their historical context. Detailed analysis of selected works. (Duplicates credit in MUHL 385b.) *Prerequisite:* MUCO 132b, MUCO 133b.

MUHL 302 Musical Cultures of the World (4, FaSp)

Survey of the world's major musical cultures; aesthetic and social values, theoretical systems, musical style and structure, instruments, and performance traditions.

MUHL 315x Music and Culture (4, FaSpSm)

Gateway to the B.A. degree in music. Western and non-Western music in its sociocultural context. Not available for credit to B.M. majors. Ability to read music highly recommended.

MUHL 331 Music History III (3)

A study of the musical styles and genres from c. 1850 to the present within their historical context. Detailed analysis of selected works. (Duplicates credit in former MUHL 280a.) *Prerequisite:* MUCO 132b, MUCO 133b; *recommended preparation:* MUCO 232b, MUCO 233b.

MUHL 332 Studies in Musical Culture (3)

Special musical repertoires, issues, and critical problems; emphasis determined by the department. (Duplicates credit in former MUHL 280b.) *Recommended preparation:* MUHL 231, MUHL 232, MUHL 331, MUCO 232b, MUCO 233b.

MUHL 333 Music History Review (1-2, FaSpSm)

Supervised review of the materials covered in undergraduate music history courses for students whose music history examinations indicate the need for further study.

MUHL 390 Special Problems (1-4)

Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

MUHL 403 Armenian Musical Culture (2)

Study of the four branches of Armenian music within the context of past and present Armenian culture.

MUHL 476 Music Criticism (2)

Procedure and practice in forming critical judgments of music and in writing music criticism; practical journalism; professional and community ethics. *Prerequisite:* for music majors, MUHL 331, MUHL 332; for nonmusic majors, MUHL 315x.

MUHL 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

MUHL 499 Special Topics (2-4, max 8, FaSpSm) Selected topics of current interest.

MUHL 560 Studies in World Music I (2, Fa) The indigenous and syncretic musics of Africa, India, Indonesia, and the Balkan countries. *Prerequisite:* MUHL 570.

MUHL 561 Studies in World Music II (2, Sp) The indigenous and syncretic musics of the post-Soviet political landscape, the Far East, the Middle East, and Latin America. *Prerequisite:* MUHL 570.

MUHL 570 Research Materials and Techniques (2, FaSpSm) Introduction to music research, information science and technical writing. Required of all graduate students majoring in music.

MUHL 572 Seminar in Historical Musical Notation (2, Fa) Performing, reading, and editing historical notation from original sources. *Prerequisite:* MUHL 570.

MUHL 573 Music of the Middle Ages (2, Sp; 2 years, Sm) Chief musical developments in Western Europe from the beginning of the Christian era to the middle of the 14th century. *Prerequisite:* MUHL 570.

MUHL 574 Music of the Renaissance (2, Sp; 2 years, Sm) Chief musical developments in Western Europe from the middle of the 14th century to the end of the 16th. *Prerequisite:* MUHL 570.

MUHL 575 Music of the Baroque Era (2, Fa; 2 years, Sm) Styles, forms, composers, and compositions of the Baroque era. *Prerequisite:* MUHL 570.

MUHL 576 Music of the Classical Period (2, Sp; 2 years, Sm) Development of classical style in symphonic music, opera, and chamber music. *Prerequisite:* MUHL 570.

MUHL 577 Music of the 19th Century (2, Fa; 2 years, Sm) Vocal and instrumental music of the Romantic era from late Beethoven through Brahms. *Prerequisite:* MUHL 570.

MUHL 578 Music since 1900 (2, FaSpSm) Musical developments in Europe and the Americas from 1900 to the present. *Prerequisite:* MUHL 570.

MUHL 579 Studies in Music History (4, max 16, FaSp) Intensive study of major problems, issues, and interpretations in the history of music. *Prerequisite:* MUHL 570.

MUHL 580 Historical Perspectives in Jazz (2) Chief musical developments in the principal styles of Jazz from their inception to the present. *Prerequisite:* graduate standing or departmental approval.

MUHL 583 Special Studies in Medieval Music (2, max 4, Irregular) Music problems and composers of the period. Specific emphasis to be determined by the department. *Prerequisite:* MUHL 570.

MUHL 584 Special Studies in Renaissance Music (2, max 4, Irregular) Music problems and composers of the period. Specific emphasis to be determined by the department. *Prerequisite:* MUHL 570.

MUHL 585 Special Studies in Baroque Music (2, max 6, Irregular) Music problems and composers of the period. Specific emphasis to be determined by the department. *Prerequisite:* MUHL 570.

MUHL 586 Special Studies in the Music of the Classical Period, 1730-1800 (2, max 6, Irregular) Music problems and composers of the period. Specific emphasis to be determined by the department. *Prerequisite:* MUHL 570.

MUHL 587 Special Studies in the Music of the 19th Century (2, max 6, Irregular) Music problems and composers of the period. Specific emphasis to be determined by the department. *Prerequisite:* MUHL 570.

MUHL 588 Special Studies in Music since 1900 (2, max 6) Music problems and composers of the period. Specific emphasis to be determined by the department. *Prerequisite:* MUHL 570.

MUHL 589 Seminar in Renaissance Repertories and Performance Practice (2, Sp) Study and discussion of Renaissance music sources and performance practice treatises. *Corequisite:* MUHL 570.

MUHL 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC. *Prerequisite:* MUHL 570.

MUHL 591 Seminar in Baroque Repertories and Performance Practice (2) Study and discussion of Baroque music sources and performance practice treatises. *Corequisite:* MUHL 570.

MUHL 594abz Master's Thesis (2-2-0) Credit on acceptance of thesis. Graded IP/CR/NC.

MUHL 595 Seminar in Performance Practices (2, max 4) Scholarly preparation and authentic performance of music written before c. 1770. Ornamentation and improvisation, tunings and temperaments, early language pronunciation, historical instruments, etc. *Prerequisite:* MUHL 570.

MUHL 599 Special Topics (2-4, max 8, Irregular) Selected topics of current interest.

MUHL 681 Studies in Musicology (4, max 16, FaSp) Close study of musical repertories and issues (particularly ones transcending period divisions), with emphasis on recent scholarship and methodologies. *Prerequisite:* MUHL 570.

MUHL 683 Seminar in Medieval Music (2-3, max 6, Irregular) Problems and composers of the period; specific emphasis determined by the department. *Prerequisite:* MUHL 570.

MUHL 684 Seminar in Renaissance Music (2-3, max 6, Irregular) Problems and composers of the period; specific emphasis determined by the department. *Prerequisite:* MUHL 570.

MUHL 685 Seminar in Baroque Music (2-3, max 6, Irregular) Problems and composers of the period; specific emphasis determined by the department. *Prerequisite:* MUHL 570.

MUHL 686 Seminar in Classical Music (2-3, max 6, Irregular) Problems and composers of the period; specific emphasis determined by the department. *Prerequisite:* MUHL 570.

MUHL 687 Seminar in Romantic Music (2-3, max 6, Irregular) Problems and composers of the period; specific emphasis determined by the department. *Prerequisite:* MUHL 570.

MUHL 688 Seminar in Music since 1900 (2-3, max 6, Irregular) Problems and composers of the period; specific emphasis determined by the department. *Prerequisite:* MUHL 570.

MUHL 790 Research (1-12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC. *Prerequisite:* MUHL 570.

MUHL 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC.

MUSIC INDUSTRY (MUIN)

MUIN 270 Introduction to the Music Industry (4, FaSp) A survey of the music business with emphasis on distribution of recorded music, music publishing, performance rights societies, record companies, agents, personal managers and contracts. Open to music majors (B.M. and B.S. degrees) only.

MUIN 275ab Recording Arts Workshop (4-4, FaSp) Principles, techniques, and aesthetic possibilities of the recording studio chain and its application to various media. Open to recording arts and music industry majors only.

MUIN 277x Introduction to Music Technology (4, FaSp) A survey of the technology used to create, prepare, perform, and distribute music, with an emphasis on recording, MIDI, music production, mastering, and Internet technologies. Not available for major credit to B.M. and B.S. music industry majors.

MUIN 280 Communications in the Music Industry (4) A survey of the music industry communications including radio, television, film, satellite communications, records, compact disc, cassette, cable and any future forms of transmission and delivery systems.

MUIN 286 Record Production Management (2, FaSp)

Function of the record producer, studio procedures, music business law, union relations, artist management, copyright and publishing agreements, record company structure.

MUIN 287 The Business and Economics of the Recording Industry (2, Fa)

Economic considerations of home, studio and location recording. Equipment, labor, facilities, media, legal and tax considerations will be explored.

MUIN 291 The Mixing Console (2, Fa)

Professional mixing console design, layout, operation, mic preamps, switching, VCAs, automation, computerized recall. *Prerequisite:* MUIN 275b.

MUIN 305 MIDI and Computer Music Production (4, FaSp)

Recording and editing MIDI and digital audio using computer software. Modern MIDI sequencing techniques for the music, film and television industries. *Recommended preparation:* MUIN 270, MUIN 275b, MUIN 280.

MUIN 340 Introduction to Sound Reinforcement (4, Sp)

An introduction to the practical application of large scale sound reinforcement for concerts, sporting events, church services and convention situations.

MUIN 360 Introduction to Music Law (4, FaSp)

A study of entertainment law with a focus on the music industry. Areas of study include contracts, domestic practices, international practices, copyright protection, trademarks. *Prerequisite:* MUIN 270; *corequisite:* MUIN 280.

MUIN 370 Distribution of Recorded Music and Music Publishing (4, Sp)

A survey of various methods used to distribute music to the public. Record distribution, manufacturing, retail outlets, accounting, publishing and performance rights. *Prerequisite:* MUIN 360 or MUIN 372bx.

MUIN 372abx The Business and Legal Aspects of the Music Industry (4-4, FaSp)

A survey of the major elements that support the music industry. History, copyright, music contracts, radio, record companies, managers, music publishing and communication. Not available for major credit to B.M. and B.S. music industry majors.

MUIN 379ab Recording Studio Theory (a: 2, Fa; b: 2, Sp)

Basic electronic concepts needed to understand operational parameters of a state-of-the-art recording studio; schematics, interface, capacitance, resistance, and problem solving. *Prerequisite:* MUIN 275b.

MUIN 385 Radio in the Music Industry (4, Fa)

A survey of radio; its operation and effect on the music industry. Topics include advertising, playlists, program direction, FCC, networks, news, promotion, payola and format development.

MUIN 389 Digital Equipment and Recording (2, Fa)

Digital equipment including computers, sequencers, digital signal processors, digital synthesizers, MIDI, and rotary and stationary digital recording. *Prerequisite:* MUIN 275b.

MUIN 392ab Acoustics and Speaker Design (2, FaSp)

Principles of acoustics relating to studio construction, wall treatment and furnishings; natural reverberation, speaker materials, passive and active crossovers, and time alignment. *Prerequisite:* MUIN 275b.

MUIN 425 Live Music Production and Promotion (4)

A survey of the presentation of the live musical experience. Both classical and popular concert presentation will be examined including venue selection, promotion and security.

MUIN 430 Artist Management and Development (4)

A study of issues relating to the personal management of music artists including negotiating contracts, image, career development, agents, touring, merchandising, fees and duties.

MUIN 435 Manufacture and Distribution of Musical Products (4, Sp)

An in-depth study of musical instrument manufacture and distribution in the United States. Topics covered include sheet music, instrument rentals, lessons and band operations.

MUIN 440 Arts Management (4, Fa)

A survey of the management of non-profit and for-profit arts organizations with emphasis on funding, donor development tax status and promotion.

MUIN 442 Operation of the Radio Studio (2, Fa)

An in-depth study of radio studio technical operations. Topics include consoles, microphones, transmission considerations, networks, satellites, and digital and analog production situations. *Prerequisite:* MUIN 275b.

MUIN 443 The Business of Music for Visual Media (4, Sp)

Introduction to music designed for synchronization to picture including history of music in cinema, music editing, supervision, performance rights licensing, production and music scoring procedures. *Prerequisite:* MUIN 360 or MUIN 372bx.

MUIN 445 International Music Industry (4, Sp)

A survey of international operations of music distribution, publishing, touring, law, promotion, customs and practices. *Prerequisite:* MUIN 360.

MUIN 446ab Computer Assisted Recording and Editing (2-2, FaSp)

Techniques and applications of recording and editing sound on personal computers. Hardware, software, editing for song, sound effects and dialog for film.

MUIN 450 Practicum in Music Industry Issues (Internship) (2-4, max 8, FaSp)

Field application of music industry theories and practices; part-time employment. Project jointly defined by student, employer and professor. Junior or senior standing. Graded CR/NC. *Prerequisite:* MUIN 360 or MUIN 372bx.

MUIN 475 Advanced Concert Management (4, Sp)

Application of theories, technologies, and practices of the live music industry. Focus on the business, management, marketing, promotion, and production of professional concert events. *Prerequisite:* MUIN 425.

MUIN 476ab Advanced Sound Reinforcement (2-2, FaSp)

Special problems of multimedia mixing with simultaneous audio re-processing for live performance situations including rigging, house mix, monitor mix, venues and power distribution.

MUIN 477 Remote Recording Techniques (2, Sp)

Special problems of location recording; specialized equipment; microphone design and operation. *Prerequisite:* MUIN 275b.

MUIN 478 Advanced Multichannel Remix (2, FaSp)

Special problems of multichannel remixing with simultaneous audio re-processing. Album, film, television and multimedia formats will be covered. *Prerequisite:* MUIN 446a.

MUIN 479 Audio Mastering (2, Fa)

A survey of the final creative steps of an audio CD. Concepts of acoustics, mastering suite design, critical listening, frequency, dynamics and sequencing. *Prerequisite:* MUIN 275b; *recommended preparation:* MUIN 446a.

MUIN 486 Computer-Assisted Music Editing for Picture (2, Fa)

Techniques and applications of recording, editing and synchronizing music and sounds to film, video or games, using time code and personal computers. *Prerequisite:* MUIN 446b.

MUIN 488ab Recording Studio Maintenance (2-2)

Fundamentals needed to perform maintenance on professional audio equipment including trouble-shooting, interface, and alignment procedures. *Prerequisite:* MUIN 275ab.

MUIN 490x Directed Research (1-8, max 12)

Individual research and readings. Not available for graduate credit.

MUIN 493 Audio Signal Processing Equipment (2, FaSp)

Principles and design characteristics of digital and analog signal processing equipment including plate and digital reverbs, synchronizers, digital editing systems and mastering systems. *Prerequisite:* MUIN 275b.

MUIN 494 Classical Music Recording (4, FaSm)

Principles of classical music recording with emphasis on history, equipment, techniques, and locations. Differences in orchestral, choral, opera, and small ensemble recording.

MUIN 495 Music Industry, Broadcast and the Internet (4, Fa)

An exploration of the effects of new technologies, laws, economic models, media (Internet, mobile, satellite), the decline of traditional broadcasting, and convergence with the music industry. *Recommended preparation:* MUIN 360 or MUIN 372bx.

MUIN 496 Music Media Solutions (4, FaSp) Group study of one current music media issue, focusing on possible solutions with practical applications. Stress on leadership, critical thinking, and professional practices. By application only. Open only to junior level and above.

MUIN 498 Final Project (1, max 4, FaSp) Required for students who are working on recording projects. Booking of studios, weekly review of projects and advice on procedures and progress.

MUIN 499 Special Topics (2-4, max 8) Selected topics of current interest.

MUIN 570 The Music Industry (4, FaSpSm) A graduate level survey of the music business with emphasis on distribution of recorded music, music publishing, performance rights societies, musical products and live music.

MUIN 575 Music Technology and Production (4, Fa) Fundamentals of audio recording. Focuses on the principles and applications of sound and hearing, recording systems and their components, and production techniques.

MUIN 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MUIN 599 Special Topics (2-4, max 8) Selected topics of current interest.

MUIN 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PERFORMANCE (EARLY MUSIC) (MPEM)

MPEM 201 Individual Instruction (1 or 2, max 8, FaSpSm) Secondary instrument for lower division students.

MPEM 390 Special Problems (1-4, Irregular) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

MPEM 450 Collegium Workshop (1, max 8, FaSp) Study and rehearsal of music of the Middle Ages, Renaissance, and Baroque; technique, interpretation, improvisation, and ornamentation. Open to all students.

MPEM 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

MPEM 499 Special Topics (2-4, max 8) Selected topics of current interest.

MPEM 501 Individual Instruction (1 or 2, max 8, FaSpSm) Secondary instruction for graduate music majors or instruction for graduate non-music majors.

MPEM 553 Individual Instruction (1 or 2, max 8, FaSpSm)

MPEM 554 Graduate Certificate Performance (4, max 16, FaSpSm) Individual instruction and related lab participation for Graduate Certificate students.

MPEM 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MPEM 599 Special Topics (2-4, max 8) Selected topics of current interest.

MPEM 650 Collegium Directing (2, max 4) Practical training in the direction of a Collegium Musicum or other early music ensemble; program planning, repertory search and preparation, historical instrumentation and arranging, rehearsal procedure, improvisational techniques, and maintenance of instruments.

MPEM 653 Performance (1 or 2, max 12, FaSpSm) Individual or master class instruction for DMA Performance majors.

MPEM 754 Artist Diploma Performance (4, max 16, FaSpSm) Individual instruction and related lab participation for Artist Diploma students.

MPEM 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PERFORMANCE (GUITAR) (MPGU)

MPGU 101x Non-Major Beginning Individual Instruction (1-2, max 2, FaSpSm) Individual instruction at the beginning level designed for non-music majors with no previous experience. Not available for credit to music majors.

MPGU 120abcd Beginning Pop/Rock Guitar (2-2-2-2, FaSpSm) Introduction to the performance technique of pop/rock guitar as well as music theory fundamentals, exploring repertoire by artists such as The Beatles and Dave Matthews.

MPGU 121 Intensive Beginning Pop/Rock Guitar (4, FaSp) Introduction to the performance technique of pop/rock guitar as well as music theory fundamentals, exploring repertoire by artists such as The Beatles and Dave Matthews.

MPGU 125 Beginning Fingerstyle/Chord Guitar (2, FaSp) Basic fingerstyle guitar, learned through the study of such pieces as "Greensleeves," "Malaguena," and "Minuet" (Bach); song accompaniment patterns and music notation for the beginner.

MPGU 126 Easy Fingerstyle Beatles (2, FaSp) Techniques of classical guitar applied to the study of five to eight Beatles songs, from "Hey Jude" to "Blackbird." No guitar or background music required.

MPGU 153 Individual Instruction (1 or 2, max 8, FaSpSm)

MPGU 158 Guitarists in the U.S. (2) Study of the lives and music of influential guitarists; analysis of musical and technical details. Open to all university students.

MPGU 159 Functional Skills for Studio Guitarists I (2) Study of technique, theory and aural skills as applied to guitar; fingerboard organization of melodic and chordal topics; sight reading.

MPGU 253 Individual Instruction (1 or 2, max 8, FaSpSm)

MPGU 257 Classical Guitar Performance Class (2, max 8, FaSp) Technical problems; solo and ensemble literature; interpretation; professional preparation. Required of first and second year Classical Guitar majors each semester in residence.

MPGU 258 Functional Skills for Studio Guitarists I (2, max 4, FaSp) Melodic and chordal topics applied to the total fingerboard; successful completion required for junior standing. *Prerequisite:* MPGU 159.

MPGU 259 Functional Skills for Classical Guitarists I (2, Fa) Fundamentals of music theory experienced through the medium of the classical guitar. Topics include analysis of important guitar works, basso continuo realization, arranging, and improvisation. *Recommended preparation:* MUCO 232a.

MPGU 300x Non-Major Individual Instruction (1-2, max 16, FaSpSm) Intermediate and advanced instruction designed for non-music majors. Not available for credit to music majors. (Duplicates credit in former MPGU 201 and MPGU 401.) *Recommended preparation:* MPGU 101x.

MPGU 301 Individual Instruction (1-2, max 16, FaSpSm) Intermediate and advanced instruction on secondary instrument for music majors, on principal instrument for music minors and B.A. music majors. Open only to music majors and minors. (Duplicates credit in former MPGU 201 and MPGU 401.)

MPGU 335 Jazz Guitar Master Class (1, FaSp) Explore the music of Joe Diorio, Wes Montgomery and John Coltrane in a master class setting.

MPGU 353 Individual Instruction (1 or 2, max 8, FaSpSm)

MPGU 357 Advanced Classical Guitar Techniques (2, Sp) An in-depth exploration of the most advanced facets of classical guitar technique. *Recommended preparation:* MPGU 257.

MPGU 358 Performance Practices for Studio Guitarists (2, max 4) Rehearsal procedures; stage deportment; interpretation of solo and ensemble literature; preparation for recitals and professional performance. *Prerequisite:* MPGU 258.

MPGU 390 Special Problems (1-4, Irregular) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

MPGU 415 Studio Guitar Pedagogy (2) Teaching techniques and literature; function of the hands; acoustical properties of instruments.

MPGU 416 Evolution of the Guitar in the United States (3) Historical survey of styles, literature and performance practice; emphasis on playing technique and interpretation. A time-line study relating guitar to popular music and historical events. (Duplicates credit in former MUHL 416.)

MPGU 417 Classical Guitar Pedagogy (2) Teaching techniques and literature; function of the hands; acoustical properties of instruments.

MPGU 426 Classical Guitar History and Literature (3, Fa) A survey of music for the guitar, lute and vihuela from 1500 to the present. (Duplicates credit in former MPGU 426a and former MUHL 426a.) *Recommended preparation:* MUHL 332.

MPGU 427 Advanced Topics in Classical Guitar History and Literature (3, Sp) An in-depth study of major works for lute, vihuela and classical guitar, with emphasis on early music and the music of the 20th century. (Duplicates credit in former MPGU 426b and former MUHL 426b.) *Recommended preparation:* MPGU 426.

MPGU 428ab Improvisation and Arranging for Guitarists (3-3) Principles of improvisation and impromptu arranging; comparison and application of techniques and musical styles of the various kinds of guitars and related fretted instruments.

MPGU 453 Individual Instruction (1 or 2, max 8, FaSpSm)

MPGU 457 Classical Guitar Performance Class (2, max 8, FaSp) Technical problems; solo and ensemble literature. Required of all third and fourth year classical guitar majors each semester in residence.

MPGU 458 Current Electric Guitar Styles (2) Analysis and performance of music and techniques currently in use in the recording, TV and motion picture studios; includes study of recordings, videos and guitar equipment.

MPGU 459 Functional Skills for Classical Guitarists II (2, Sp) Advanced theory and composition on the guitar. Weekly analysis exercises, arranging projects and studies in improvisation and ornamentation are directed toward creating an original solo or chamber work for guitar. *Recommended preparation:* MUCO 232b, MUCO 233b.

MPGU 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

MPGU 499 Special Topics (2-4, max 8) Selected topics of current interest.

MPGU 501 Individual Instruction (1 or 2, max 8, FaSpSm) Secondary instruction for graduate music majors or instruction for graduate non-music majors.

MPGU 553 Individual Instruction (1 or 2, max 8, FaSpSm)

MPGU 554 Graduate Certificate Performance (4, max 16, FaSpSm) Individual instruction and related lab participation for Graduate Certificate students.

MPGU 557 Advanced Classical Guitar Performance Class (1, max 4) Study of advanced classical guitar solo and ensemble literature; interpretation; professional preparation and other topics appropriate for group study. *Prerequisite:* bachelor's degree with music major; principal instrument, classical guitar.

MPGU 558 Advanced Studio Guitar Performance Class (1, max 4) Study of advanced studio guitar and ensemble literature; interpretation; professional preparation and other topics appropriate for group study. *Prerequisite:* bachelor's degree with music major; principal instrument, studio guitar.

MPGU 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MPGU 599 Special Topics (2-4, max 8) Selected topics of current interest.

MPGU 653 Performance (1 or 2, max 12, FaSpSm) Individual or master class instruction for DMA Performance majors.

MPGU 754 Artist Diploma Performance (4, max 16, FaSpSm) Individual instruction and related lab participation for Artist Diploma students.

MPGU 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PERFORMANCE (KEYBOARD STUDIES) (MPKS)

MPKS 150abcd Beginning Piano (2-2-2-2, FaSp) Techniques of performance, note reading, and basic musicianship. Not open to music majors.

MPKS 153 Individual Instruction (1 or 2, max 8, FaSpSm)

MPKS 160ab Functional Skills for Keyboard Majors I (a: 2, Fa; b: 2, Sp) Sight-reading and principles of style as related to intermediate literature; c-clef and open score reading; improvisation and functional harmony. Introduction to standard reference works, periodicals. Required of all keyboard majors.

MPKS 170ab Introduction to Piano Repertoire and Performance (a: 1, Fa; b: 1, Sp) Survey of basic piano repertoire and styles through lecture, discussion, and performance. *a:* Late Baroque through Beethoven; *b:* Schubert to the present. *Prerequisite:* piano performance major status.

MPKS 228 Four-Hand Keyboard Repertoire (1, max 4, FaSp) Preparation and performance of literature for piano duets and duo-piano. (Duplicates credit in former MUEN 228.)

MPKS 250ab Keyboard Instruction I (2-2, FaSp) Beginning and elementary instruction; emphasis on reading skills, harmonization, transposition, score reading, improvisation; group instruction in a keyboard laboratory facility.

MPKS 253 Individual Instruction (1 or 2, max 8, FaSpSm)

MPKS 260ab Functional Skills for Keyboard Majors II (2-2, FaSp) Sight-reading and principles of style as related to lower advanced literature; extended score reading; improvisation and functional harmony. Mini-survey; basic keyboard literature. *Prerequisite:* MPKS 160b.

MPKS 300x Non-Major Individual Instruction (1-2, max 16, FaSpSm) Intermediate and advanced instruction designed for non-music majors. Not available for credit to music majors. (Duplicates credit in former MPKS 201 and MPKS 401.)

MPKS 301 Individual Instruction (1-2, max 16, FaSpSm) Intermediate and advanced instruction on secondary instrument for music majors, on principal instrument for music minors and B.A. music majors. Open only to music majors and minors. (Duplicates credit in former MPKS 201 and MPKS 401.)

MPKS 350ab Keyboard Instruction II (2-2, FaSp) Intermediate and advanced instruction; development of reading, performance and improvisation skills necessary for proficiency examinations. Group and individualized instruction in a keyboard laboratory facility. *Prerequisite:* MPKS 250b.

MPKS 353 Individual Instruction (1 or 2, max 8, FaSpSm)

MPKS 360ab Accompanying (a: 2, Fa; b: 2, Sp) Techniques of vocal and instrumental accompanying.

MPKS 390 Special Problems (1-4, Irregular) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

MPKS 431ab Piano Pedagogy: Introduction and Practicum (2-2, FaSp) The learning process at the keyboard; pedagogy and methodology of beginning methods. Studio/group instruction: children/adults. MPKS 431a: survey and observation. MPKS 431b: practice teaching: beginners. *Prerequisite:* MPKS 253, MPKS 260b.

MPKS 435 Technology of the Pianoforte and Harpsichord (2, Irregular) Analysis of technical innovations and maintenance of the pianoforte and harpsichord as related to musical performance.

MPKS 450ab Piano Pedagogy: Intermediate Literature and Functional Skills (a: 2, Fa; b: 2, Sp) Methods, study of college curriculum keyboard classes. Studio/group instruction. Business practices; audition, interview techniques. 450a: Survey and observation. 450b: practice teaching; secondary piano classes. (Duplicates credit in former MUED 450ab.) *Prerequisite:* a: MPKS 431b; b: MPKS 450a.

MPKS 453 Individual Instruction (1 or 2, max 8, FaSpSm)

MPKS 472ab Piano History and Literature (a: 2, Fa; b: 2, Sp) Solo piano literature; emphasis on composers' influences, performance practices and the development of the pianoforte. a: Late Baroque through Beethoven. b: Schubert to the present. (Duplicates credit in former MUHL 472ab.) *Prerequisite:* for music majors, MUHL 331, MUHL 332; for nonmusic majors, MUHL 315x.

MPKS 481 Interpretation of Baroque Music (2, max 6, FaSp) Repertoire and performance practice in music of the period: style, phrasing, embellishments, dynamics, improvisation, tempi. Performance in class of solo and ensemble works, instrumental and vocal.

MPKS 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

MPKS 499 Special Topics (2-4, max 8) Selected topics of current interest.

MPKS 501 Individual Instruction (1 or 2, max 8, FaSpSm) Secondary instruction for graduate music majors or instruction for graduate non-music majors.

MPKS 520 Special Studies in Solo Repertoire for Piano (2, max 12, FaSp) Historical, stylistic and pedagogical aspects of solo repertoire. Special emphasis to be determined by the department.

MPKS 553 Individual Instruction (1 or 2, max 8, FaSpSm)

MPKS 554 Graduate Certificate Performance (4, max 16, FaSpSm) Individual instruction and related lab participation for Graduate Certificate students.

MPKS 560 Song Interpretation Master Class (2, max 12, FaSp) For advanced singers and pianists.

MPKS 561 Chamber Music Interpretation Master Class (2, max 12, FaSp) For advanced pianists and instrumentalists.

MPKS 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MPKS 599 Special Topics (2-4, max 8) Selected topics of current interest.

MPKS 653 Performance (1 or 2, max 12, FaSpSm) Individual or master class instruction for DMA Performance majors.

MPKS 754 Artist Diploma Performance (4, max 16, FaSpSm) Individual instruction and related lab participation for Artist Diploma students.

MPKS 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PERFORMANCE (POPULAR MUSIC) (MPPM)

MPPM 100 Popular Music Forum (1, max 4, FaSp) A weekly lecture series addressing a wide range of special topics and issues confronting the popular musician. Graded CR/NC.

MPPM 120 Popular Music Performance I (2, FaSp) Study of musical elements appropriate to the performance of popular music in a collaborative, interactive environment.

MPPM 153 Individual Instruction (1, 2, max 8, FaSp) Weekly individual instruction.

MPPM 240 Drumming Proficiency for the Popular Musician (2, FaSp) Beginning and elementary instruction in drum set techniques.

MPPM 250 Keyboard Proficiency for the Popular Musician (2, FaSp) Development of practical keyboard skills, including reading and realizing chord symbols, basics of voice leading, study of various harmonic and rhythmic styles.

MPPM 253 Individual Instruction (1, 2, max 8, FaSp) Weekly individual instruction.

MPPM 301 Individual Instruction (1-2, max 16, FaSpSm) Intermediate and advanced instruction on secondary instrument for all majors and minors except MPPM. Not open to B.M. in Popular Music Performance students.

MPPM 320 Popular Music Performance II (2, max 8, FaSp) Development of ensemble and communication skills through the performance and interpretation of American popular music in concert and studio settings. Development of original compositions. Open only to juniors and seniors. *Prerequisite:* MPPM 120.

MPPM 325ab Arranging in Popular Music (2, Fa; 2, Sp) a: Principles and techniques of arranging for voice and rhythm section in the popular music idiom. *Prerequisite:* MTEC 310 and MTEC 311 or MUIN 446b; b: writing and arranging for small groups of brass, wind, and/or string instruments with rhythm section in the popular music idiom.

MPPM 340 Intermediate Drum Set Proficiency (2, FaSp) Intermediate level instruction in drum set performance including accompaniment techniques, fills, beat and brush patterns in jazz, Afro-Caribbean and Brazilian styles, interpreting drum charts. *Recommended preparation:* MPPM 240.

MPPM 450ab Final Project (1, Fa; 1, Sp) Major collaborative performance project in popular music. Graded CR/NC.

MPPM 499 Special Topics (2-4, max 8) Selected topics of current interest

PERFORMANCE (STRINGS) (MPST)

MPST 101x Non-Major Beginning Individual Instruction (1-2, max 2, FaSpSm) Individual instruction at the beginning level designed for non-music majors with no previous experience. Not available for credit to music majors.

MPST 153 Individual Instruction (1 or 2, max 8, FaSpSm)

MPST 163 Beginning Harp (2, max 8, FaSp) Basic instruction in the fundamentals of solo harp playing, note reading, and basic musicianship. Open to music and non-music majors.

MPST 253 Individual Instruction (1 or 2, max 8, FaSpSm)

MPST 262 Double Bass Performance Class (1, max 4, FaSp) Study of solo and orchestra repertoire, professional preparation, and teaching techniques. Required of all first and second year double bass majors each semester in residence. *Prerequisite:* music major.

MPST 263 Harp Performance Class (1, max 4, FaSp) Study of solo and orchestra repertoire, professional preparation, and teaching technique. Required of all first and second year harp majors each semester in residence. *Prerequisite:* music major.

MPST 300x Non-Major Individual Instruction (1-2, max 16, FaSpSm) Intermediate and advanced instruction designed for non-music majors. Not available for credit to music majors. (Duplicates credit in former MPST 201 and MPST 401.) *Recommended preparation:* MPST 101x.

MPST 301 Individual Instruction (1-2, max 16, FaSpSm) Intermediate and advanced instruction on secondary instrument for music majors, on principal instrument for music minors and B.A. music majors. Open only to music majors and minors. (Duplicates credit in former MPST 201 and MPST 401.)

MPST 353 Individual Instruction (1 or 2, max 8, FaSpSm)

MPST 390 Special Problems (1-4, Irregular) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

MPST 453 Individual Instruction (1 or 2, max 8, FaSpSm)

MPST 462 Double Bass Performance Class (1, max 8, FaSp) Continuation of MPST 262. Required of all third and fourth year double bass majors each semester in residence. *Prerequisite:* music major.

MPST 463 Harp Performance Class (1, max 8, FaSp) Continuation of MPST 263. Required of all third and fourth year harp majors each semester in residence. *Prerequisite:* music major.

MPST 471ab String Pedagogy (a: 2, Fa; b: 2, Sp) Survey of teaching literature; techniques of teaching beginning, intermediate, and advanced students.

MPST 472 Orchestra Repertoire – Strings (2, max 8, FaSp) Orchestral literature for string players, covering a broad spectrum of the repertoire; emphasis on preparation for auditions.

MPST 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

MPST 499 Special Topics (2-4, max 8) Selected topics of current interest.

MPST 501 Individual Instruction (1 or 2, max 8, FaSpSm) Secondary instruction for graduate music majors or instruction for graduate non-music majors.

MPST 553 Individual Instruction (1 or 2, max 8, FaSpSm)

MPST 554 Graduate Certificate Performance (4, max 16, FaSpSm) Individual instruction and related lab participation for Graduate Certificate students.

MPST 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MPST 599 Special Topics (2-4, max 8) Selected topics of current interest.

MPST 653 Performance (1 or 2, max 12, FaSpSm) Individual or master class instruction for DMA Performance majors.

MPST 754 Artist Diploma Performance (4, max 16, FaSpSm) Individual instruction and related lab participation for Artist Diploma students.

MPST 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PERFORMANCE (VOCAL ARTS) (MPVA)

MPVA 101x Non-Major Beginning Individual Instruction (1-2, max 2, FaSpSm) Individual instruction at the beginning level designed for non-music majors with no previous experience. Not available for credit to music majors.

MPVA 141 Class Voice (2, max 4, FaSp) Introduction to the fundamental principles of singing: breath control, tone production, diction, and the use of appropriate song material.

MPVA 153 Individual Instruction (1 or 2, max 8, FaSpSm) Weekly individual instruction and vocal performance forum.

MPVA 203ab Acting for Singers I (2-2, FaSp) Use of dramatic techniques in the interpretation and performance of music; basic acting techniques for the operatic and recital stages; sensory exercises, movement, improvisation, relaxation and make-up. (Duplicates credit in former MPVA 303.) *Recommended preparation:* MPVA 153.

MPVA 241 Intermediate Class Voice (2, max 4, FaSp) Continued development of the fundamentals of singing, diction, and repertoire building. *Prerequisite:* MPVA 141.

MPVA 253 Individual Instruction (1 or 2, max 8, FaSpSm) Weekly individual instruction and vocal performance forum.

MPVA 300x Non-Major Individual Instruction (1-2, max 16, FaSpSm) Intermediate and advanced instruction designed for non-music majors. Not available for credit to music majors. (Duplicates credit in former MPVA 201 and MPVA 401.) *Recommended preparation:* MPVA 101x.

MPVA 301 Individual Instruction (1-2, max 16, FaSpSm) Intermediate and advanced instruction: secondary emphasis for music majors, principal emphasis for music minors and all B.A. music majors. Open only to music majors and minors. (Duplicates credit in former MPVA 201 and MPVA 401.)

MPVA 353 Individual Instruction (1 or 2, max 8, FaSpSm) Weekly individual instruction and vocal performance forum.

MPVA 390 Special Problems (1-4, Irregular) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

MPVA 402 Musical Theatre Workshop (2, max 8, Irregular) Stylistic and technical features of dramatic and musical elements involved in performance of American musical and standard operetta repertory; staging of scenes.

MPVA 403 Acting for Singers II (2, max 8, FaSp) Continuation of MPVA 203ab. Acting of operatic roles in different periods and styles; specific recital and audition techniques. *Recommended preparation:* MPVA 203ab.

MPVA 404 Word and Music in Opera (2, max 8, Irregular) Performance class for singers and pianists; analysis of recitatives, arias, and ensembles of various operatic styles; study of the technique of effective musical delivery. By audition only. *Recommended preparation:* MPVA 203ab.

MPVA 405 USC Opera (2, max 12, FaSp) Preparation, rehearsal, and performance of operatic works and excerpts; study of different operatic styles; public appearances. By audition only.

MPVA 406 Opera Coaching Techniques (2, max 8, Irregular) Score study for pianists, coaches, and conductors; role analysis; transcription techniques for one or two pianos of an orchestral score.

MPVA 407 Directing for the Operatic Stage (2, max 8, FaSp) Various approaches to operatic style; basic blocking; stage management. Student direction of scenes produced in USC Opera.

MPVA 438 Vocal Pedagogy (2, Fa) Voice physiology and function.

MPVA 439 Vocal Pedagogy Practicum (2, Sp) Pedagogical approaches and methodology; practice teaching. *Prerequisite:* MPVA 438.

MPVA 440 Italian and French Diction (2) Principles of pronunciation and enunciation; use of international phonetic alphabet. (Duplicates credit in former MPVA 442a.)

MPVA 441 English and German Diction (2) Principles of pronunciation and enunciation; use of international phonetic alphabet. (Duplicates credit in former MPVA 442b.)

MPVA 442 Introduction to the International Phonetic Alphabet (2, Fa) Principles of pronunciation and enunciation; basic application of the International Phonetic Alphabet symbols and sounds to English, German, Italian, French and Latin.

MPVA 443 Cantata and Oratorio (2, 2 years, Fa) Historical survey of literature, style and performance practice; emphasis on performing solo and small ensemble sections of larger works.

MPVA 453 Individual Instruction (1 or 2, max 8, FaSpSm) Weekly individual instruction and vocal performance forum.

MPVA 479 Song Literature (2, max 4, FaSp) Song literature of Italy, France, Germany, Russia, Norway, Sweden, England, America; comparative analysis of various composers and their influence on song literature. (Duplicates credit in former MUHL 479.) *Recommended preparation:* for music majors, MUHL 331; for non-music majors, MUHL 315x.

MPVA 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

MPVA 499 Special Topics (2-4, max 8) Selected topics of current interest.

MPVA 501 Individual Instruction (1 or 2, max 8, FaSpSm) Secondary instruction for graduate music majors or instruction for graduate non-music majors.

MPVA 540 Special Studies in Vocal Literature (2, max 6, Sp) Art song, concert and operatic repertoire. Emphasis to be determined by the department.

MPVA 541 Comparative Vocal Pedagogy (2, 2 years, Sp) Survey of pedagogical sources from early 17th century to present; major historic figures, terminologies and methods; relevance to modern-day singing and teaching practice.

MPVA 553 Individual Instruction (1 or 2, max 8, FaSpSm) Weekly individual instruction and vocal performance forum.

MPVA 554 Graduate Certificate Performance (4, max 16, FaSpSm) Individual instruction and related lab participation for Graduate Certificate students.

MPVA 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MPVA 599 Special Topics (2-4, max 8) Selected topics of current interest.

MPVA 653 Individual Instruction (1 or 2, max 12, FaSpSm) Weekly individual instruction and vocal performance forum.

MPVA 754 Artist Diploma Performance (4, max 16, FaSpSm) Individual instruction and related lab participation for Artist Diploma students.

MPVA 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PERFORMANCE (WIND AND PERCUSSION) (MPWP)

MPWP 101x Non-Major Beginning Individual Instruction (1-2, max 2, FaSpSm) Individual instruction at the beginning level designed for non-music majors with no previous experience. Not available for credit to music majors.

MPWP 153 Individual Instruction (1 or 2, max 8, FaSpSm)

MPWP 252 Individual Instrument Performance Class I (1, max 4, FaSp) Solo and orchestra repertoire, professional preparation, reed making, and other matters appropriate to group study. Required of all first and second year wind and percussion majors each semester in residence.

MPWP 253 Individual Instruction (1 or 2, max 8, FaSpSm)

MPWP 300x Non-Major Individual Instruction (1-2, max 16, FaSpSm) Intermediate and advanced instruction designed for non-music majors. Not available for credit to music majors. (Duplicates credit in former MPWP 201 and MPWP 401.) *Recommended preparation:* MPWP 101x.

MPWP 301 Individual Instruction (1-2, max 16, FaSpSm) Intermediate and advanced instruction on secondary instrument for music majors, on principal instrument for music minors and B.A. music majors. Open only to music majors and minors. (Duplicates credit in former MPWP 201 and MPWP 401.)

MPWP 353 Individual Instruction (1 or 2, max 8, FaSpSm)

MPWP 390 Special Problems (1-4, Irregular) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

MPWP 452 Individual Instrument Performance Class II (1, max 4, FaSp) Solo and orchestra repertoire, professional preparation, reed making, and other matters appropriate to group study. Required of all third and fourth year wind and percussion majors each semester in residence.

MPWP 453 Individual Instruction (1 or 2, max 8, FaSpSm)

MPWP 481 Interpretation of Baroque Music (2, max 6, FaSp) Repertoire and performance practice in music of the period: style, phrasing, embellishments, dynamics, tempi. Performance in class of solo and ensemble works, instrumental and vocal.

MPWP 482 Interpretation of Classic, Romantic, and 20th Century Wind and Percussion Music (2) Analysis and performance of 18th, 19th, and 20th century ensemble music, octet through symphonic band; historical perspectives of instruments including technical developments.

MPWP 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit.

MPWP 499 Special Topics (2-4, max 8) Selected topics of current interest.

MPWP 501 Individual Instruction (1 or 2, max 8, FaSpSm) Secondary instruction for graduate music majors or instruction for graduate non-music majors.

MPWP 551 Individual Instrument Performance Class III (1, max 2, FaSp) Solo and orchestra repertoire, professional preparation, reed making, and other matters appropriate to group study. Intended for M.M. wind and percussion majors.

MPWP 553 Individual Instruction (1 or 2, max 8, FaSpSm)

MPWP 554 Graduate Certificate Performance (4, max 16, FaSpSm) Individual instruction and related lab participation for Graduate Certificate students.

MPWP 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MPWP 599 Special Topics (2-4, max 8) Selected topics of current interest.

MPWP 653 Performance (1 or 2, max 12, FaSpSm) Individual or master class instruction for DMA Performance majors.

MPWP 754 Artist Diploma Performance (4, max 16, FaSpSm) Individual instruction and related lab participation for Artist Diploma students.

MPWP 790 Research (1-12) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

SCHOOL OF MUSIC (MUSC)

MUSC 110 Freshman Forum (1, FaSp) Introduction to issues and skills relevant to the professional musical world of today. Open only to music majors. Graded CR/NC.

MUSC 255 Songwriting I (2, FaSp) Development of musical and lyrical skills, composing, listening, analysis, and critiques of popular original music.

MUSC 355 Songwriting II (2, FaSp) Continuation of Songwriting I; particular emphasis on the analysis of the techniques of important popular songwriters and the application of these techniques to original songs. (Duplicates credit in former MUCO 252.) *Prerequisite:* MUSC 255.

MUSC 400m The Broadway Musical: Reflection of American Diversity, Issues, and Experiences (4, FaSpSm) Selected Broadway musicals serve as a catalyst for inquiry into human diversity, cross-culturalism, and significant social and political issues.

MUSC 420m Hip-Hop Music and Culture (4) A history of hip-hop music from its inception to the present: its musical processes and styles, as well as attendant social, political, and cultural issues.

MUSC 422 The Beatles: Their Music and Their Times (4) Music, lyrics, recordings, production techniques, career strategy, social ramifications, and especially the technological impact of the musical group known as The Beatles.

MUSC 423 Classic Rock: Popular Music of the Sixties and Seventies (2) Critical examination of the lyrics, structure, associated mythology, technology, and evolving styles of popular music reflecting the turbulent societal changes during the Sixties and Seventies.

MUSC 424 Iconic Figures of Popular Music (2, max 8, FaSp) Music, life, recordings, and attendant musical, cultural and political influences of a seminal musician or group in 20th or 21st century popular music.

MUSC 430m Music and the Holocaust (4, FaSp) Study of the creation and performance of Holocaust-related music from 1933 to the present, including interaction with other arts.

MUSC 444 American Roots Music: History and Culture (4, Irregular) The history, genre, styles, songs, lyrics, and influences of American vernacular music in the 20th century, including the background that spawned these musical genres.

MUSC 450m The Music of Black Americans (4, FaSp) The musical contribution of Africans and African Americans to American society. Musical genres and the relationship between music and society will be topics for examination.

MUSC 455 Songwriting III: The Performing Songwriter (2) Continuation of Songwriting I and II with emphasis on the development of performance skills of original popular music in preparation for songwriting showcases. (Duplicates credit in former MUCO 254.)
Prerequisite: MUSC 355.

MUSC 460 Film Music: History and Function from 1930 to the Present (4, Fa) A survey of the art and craft of film music as practiced by outstanding composers in motion pictures.

MUSC 465 Music, Television and American Culture (4, Sp) An exploration of the social and cultural impact of music written for, popularized by, or exploited by American television from the 1950s through today.

MUSC 470 Contemporary Popular Music: A Global Perspective (2, Sm) Contemporary popular music in global culture; includes performance and collaboration opportunities with local musicians.

MUSC 496 Careers in Music (2, Sp) A study of the practical aspects of the music business, including the history, procedures, standard practices, economics and technologies employed by the music industry. Open to juniors and seniors only.

MUSC 498x Internship in Music (1-4, max 8, FaSpSm) Practical work experience in the student's field of study, at an off-campus location. Students are individually supervised by faculty. Open only to Bachelor of Music and Bachelor of Arts, Music majors only. Not available for graduate credit. Graded CR/NC.

MUSC 499 Special Topics (2-4, max 8, FaSpSm) Selected topics of current interest.

MUSC 598 Internship in Music (1-4, max 4, FaSpSm) Practical work experience in the student's field of study, at an off-campus location. Students are individually supervised by faculty. Open only to music majors. Graded CR/NC.

MUSC 599 Special Topics (2-4, max 8) Selected topics of current interest.

MUSC 798 Internship in Music (1-4, max 4, FaSpSm) Practical work experience in the student's field of study, at an off-campus location. Students are individually supervised by faculty. Open only to doctoral students in music. Graded CR/NC.

MUSC 800 Studies for the Qualifying Examination in Music (0, FaSpSm) Studies for the qualifying examination. Duplicates credit in GRSC 800. Graded Credit/No Credit. Open only to Doctor of Musical Arts students.

USC School of Pharmacy



Ranked tenth in 2013 by U.S. News & World Report for its Pharm.D. program, the USC School of Pharmacy excels in involving students in all aspects of patient care. This effort was recognized by the American Pharmacists Association, which named the school's Academy of Student Pharmacists best in the nation as "the chapter with the greatest level of impact and involvement in patient care."

Founded in 1905, the USC School of Pharmacy is the oldest and foremost pharmacy school in Southern California. The school is a national leader known for its progressive curriculum and research excellence. Approximately 50 percent of the practicing pharmacists in Southern California are graduates of USC. The school has an average student body of 735 full-time students in the Pharm.D. program, 220 students in Master of Science, Doctor of Philosophy and Doctor of Regulatory Science programs, a full-time faculty of 74 and more than 400 part-time and volunteer faculty.

The school occupies state-of-the-art facilities on the USC Health Sciences Campus in metropolitan Los Angeles, adjacent to the Los Angeles County+USC Medical Center (one of the largest teaching hospitals in the country), the USC Norris Cancer Hospital and the Keck Hospital of USC. USC pharmacy students receive clinical training at these facilities and many other affiliated hospitals, health care clinics, skilled nursing facilities, home health care agencies and pharmacies in the Southern California region.

Recognized as one of the most innovative schools of pharmacy, the USC School of Pharmacy serves as a model for other progressive schools. In 1950, USC was the first to establish a Doctor of Pharmacy program. Additional national "firsts" that distinguish the school include: first clinical pharmacy program and first M.S. in radiopharmacy (both in 1968); first Pharm.D./MBA dual degree program (1988); first M.S. and Ph.D. programs in pharmaceutical economics and policy (1994) and first professional doctorate in regulatory science (2008).

Consistently the top-ranked private school of pharmacy, the school is a top-10 pharmacy school nationwide. The School of Pharmacy is a member of the American Association of Colleges of Pharmacy, and the Pharm.D. program is accredited by the Accreditation Council for Pharmacy Education.

Health Sciences Campus

John Stauffer Pharmaceutical Sciences Center
1985 Zonal Avenue

Los Angeles, CA 90089-9121

(323) 442-1369

FAX: (323) 442-1681

Office of Admission and Student Affairs

(323) 442-1466

Email: pharmadm@usc.edu

Email: pharmfa@usc.edu

pharmacyschool.usc.edu

Administration

R. Pete Vanderveen, Ph.D., R.Ph., *Dean*

Sarah F. Hamm-Alvarez, Ph.D., *Executive Vice Dean and Vice Dean for Research and Graduate Affairs*

Ronald L. Alkana, Pharm.D., Ph.D., *Associate Dean, Graduate Affairs and Interdisciplinary Graduate Programs*

Scott Evans, Pharm.D., *Associate Dean, Academic Health Center Programs*

Fred G. Weissman, Pharm.D., J.D., *Associate Dean, Student/Faculty Affairs and Admission*

Cynthia C. White, B.A., *Associate Dean, Administrative Affairs*

Michael Z. Wincor, Pharm.D., *Associate Dean, Global Initiatives and Technology and Interim Chair, Titus Family Department of Clinical Pharmacy and Pharmaceutical Economics & Policy*

Kathleen H. Besinque, Pharm.D., M.S.Ed., *Assistant Dean, Curriculum and Assessment*

Curtis Okamoto, Ph.D., *Interim Chair, Department of Pharmacology and Pharmaceutical Sciences*

Faculty

John Stauffer Dean's Chair in Pharmaceutical Sciences: R. Pete Vanderveen, Ph.D., R.Ph.

University Professor and Boyd P. and Elsie D. Welin Professor in Pharmaceutical Sciences: Jean Chen Shih, Ph.D.

Distinguished Professor: Walter Wolf, Ph.D.

Hygeia Centennial Chair in Clinical Pharmacy: Steven Chen, Pharm.D.

Quintiles Chair in Pharmaceutical Development and Regulatory Innovation: Darius Lakdawalla, Ph.D.

R. Pete Vanderveen Endowed Chair in Therapeutic Discovery and Development: Roberta Diaz Brinton, Ph.D.

John A. Biles Professor in Pharmaceutical Sciences: Wei-Chiang Shen, Ph.D.

Gavin S. Herbert Professor in Pharmaceutical Sciences: Sarah F. Hamm-Alvarez, Ph.D.

Charles Krown/Pharmacy Alumni Professor in Pharmaceutical Sciences: Enrique Cadenas, M.D., Ph.D.

Provost Professor of Cell and Neurobiology, Pharmacology and Pharmaceutical Sciences, and Psychology: Pat Levitt, Ph.D.

Provost Professor of Medicine and Pharmacy: Michael Kahn, Ph.D.

Professors: Ronald L. Alkana, Pharm.D., Ph.D.; Enrique Cadenas, M.D., Ph.D.; Roberta Diaz Brinton, Ph.D.; Dana Goldman, Ph.D.; Sarah F. Hamm-Alvarez, Ph.D.; Nouri Neamati, Ph.D.; Michael B. Nichol, Ph.D.; Wei-Chiang Shen, Ph.D.; Jean C. Shih, Ph.D.; Rajindar Sohal, Ph.D.; R. Pete Vanderveen, Ph.D.; Walter W. Wolf, Ph.D.

Associate Professors: James D. Adams, Jr., Ph.D.; Julio A. Camarero, Ph.D.; Jason N. Doctor, Ph.D.; Roger F. Duncan, Ph.D.; Ian S. Haworth, Ph.D.; Geoffrey Joyce, Ph.D.; Jeffrey S. McCombs, Ph.D.; Curtis T. Okamoto, Ph.D.; Neeraj Sood, Ph.D.; Bangyan Stiles, Ph.D.; Clay C.C. Wang, Ph.D.

Assistant Professors: J. Andrew MacKay, Ph.D.; Bogdan Z. Olenyuk, Ph.D.

Lecturer: Rebecca Romero, Ph.D.

Research Professor: Ian Hutchinson, Ph.D., D.Sc.

Research Associate Professors: Kevin J.Y.H. Shin Chen, Ph.D.; Liqun Zhao, Ph.D.; Julie Zissimopoulos, Ph.D.

Research Assistant Professors: Julianna Hwang, Pharm.D., Ph.D.; Jennica Krankel, Ph.D.; Yahni Zheng, Ph.D.

Professors of Pharmacy: Frances Richmond, Ph.D.; Glen L. Stimmel, Pharm.D.; Bradley R. Williams, Pharm.D.; Annie Wong-Beringer, Pharm.D.

Associate Professors of Pharmacy: Melvin F. Baron, Pharm.D., MPA; Paul M. Beringer, Pharm.D.; Kathleen H. Besinque, Pharm.D., M.S.Ed.; Steven Chen, Pharm.D.; Alfred Chin, Pharm.D.; Daryl L. Davies, Ph.D.; Julie A. Dopheide, Pharm.D.; Kevin L. Forrester, Pharm.D.; Jeffery Goad, Pharm.D., MPH; William C. Gong, Pharm.D.; Cynthia L.L. Lieu, Pharm.D.; Stanley G. Louie, Pharm.D.; Gladys H. Mitani, Pharm.D.; Tien Ng, Pharm.D.; Kathleen Rodgers, Ph.D.; Irving Steinberg, Pharm.D.; Fred G. Weissman, Pharm.D., J.D.; Michael Z. Wincor, Pharm.D.

Assistant Professors of Pharmacy: Betty Chan, Pharm.D.; Marc Cosep, Pharm.D.; Jennifer H. Cupo-Abbott, Pharm.D.; Melissa Durham, Pharm.D.; Emily Han, Pharm.D.; Jiwon Kim, Pharm.D.; Kum Ja K. Lee, Pharm.D.; May C. Mak, Pharm.D.; Edith Mirzaian, Pharm.D.; Susie Park, Pharm.D.; Paula Phongsamron, Pharm.D.; Florence H. Wong-Yu, Pharm.D.

Distinguished Emeritus Professor and Dean: John A. Biles, Ph.D.

Emeritus Professor and Dean: Timothy M. Chan, Ph.D.

Emeritus Professor: Eric J. Lien, Ph.D.

Programs

The School of Pharmacy offers curricula leading to the Doctor of Pharmacy (Pharm.D.) and Doctor of Regulatory Science (D.R.Sc.) degrees. Through the Graduate School, graduate degrees offered are: Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) in pharmaceutical sciences, Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) in molecular pharmacology and toxicology, Master of Science (M.S.) in pharmaceutical economics and policy, Doctor of Philosophy (Ph.D.) in health economics, Master of Science (M.S.) in Health Care Decision Analysis, Doctor of Philosophy (Ph.D.) in clinical and experimental therapeutics, Master of Science (M.S.) in regulatory science, and Master of Science (M.S.) in management of drug development. Six dual degree programs, one joint program and numerous certificate programs are also offered: Pharm.D./J.D., Pharm.D./MBA, Pharm.D./MPH, Pharm.D./M.S. in regulatory science, Pharm.D./M.S. in gerontology, Pharm.D./M.S. in global medicine, Pharm.D./Ph.D., Pharm.D./graduate certificate in gerontology, certificate in clinical research design and management, certificate in food safety, certificate in preclinical drug development, and certificate in patient and product safety.

The USC School of Pharmacy Doctor of Pharmacy is accredited by the Accreditation Council for Pharmacy Education, 20 North Clark Street, Suite 2500, Chicago, IL 60602, Phone: (312) 664-3575, FAX (312) 664-4652.

Tuition and Fees (Estimated)

Tuition for School of Pharmacy degree programs (Pharm.D.; M.S. and Ph.D. in pharmaceutical sciences; M.S. and Ph.D. in molecular pharmacology and toxicology; M.S. and Ph.D. in health economics) is charged at the following rate (which differs from standard USC tuition): per semester (15–18 units) \$23,431. See the Tuition and Fees section, page xx, for fee information. These fees are subject to possible later change.

Doctor of Pharmacy students must pay a \$500 non-refundable acceptance deposit that is applicable toward tuition. For deposit information in other degree programs in the School of Pharmacy, please consult appropriate offices.

Honor Societies***Rho Chi***

Theta chapter of Rho Chi, national honorary pharmaceutical society, was established at USC in 1925. Charters for chapters of this organization are granted only to student groups in those colleges that are members in good standing of the American Association of Colleges of Pharmacy. Eligibility for membership is based on high attainment in scholarship, character, personality and leadership. All candidates selected for membership must have completed two years of college work, and they must be approved by the Dean of the School of Pharmacy.

Phi Lambda Sigma

The Phi Lambda Sigma chapter was established at USC in 1988. This national pharmacy leadership society is devoted to identifying, supporting and recognizing the contribution of pharmacy students to their colleges, their classmates, their campuses, their communities and to their chosen profession.

Student Housing and Service Facility, Health Sciences Campus

There are limited university-managed accommodations on the Health Sciences Campus. The Blanche and Frank R. Seaver Student Residence, adjacent to the John Stauffer Pharmaceutical Sciences Center, provides dining facilities and a bookstore. For residence information, call (323) 442-1576; for bookstore information, call (323) 442-2674. Students may also live in student housing on

the University Park Campus, located about eight miles from the Health Sciences Campus.

Student Health Services, Health Sciences Campus

Services of the Student Health Center, covered by the mandatory student health fee, include the ambulatory care health services provided by the Student Health Center nursing staff. The Student Health Center is located in the USC Health Care Consultation Center,

1500 San Pablo Street, Suite 104, adjacent to the USC University Hospital, one block northeast of the School of Pharmacy. The telephone number is (323) 442-5980. In addition to the student health fee, all Pharm.D. students must have major medical insurance coverage from the USC Student Health Plan. A student may request a waiver of the USC Student Health Plan if covered by a personal medical plan that meets criteria established by the Health Insurance Office.

Professional Degrees

Doctor of Pharmacy

A four-year curriculum leading to the Doctor of Pharmacy (Pharm.D.) is offered to students admitted to the School of Pharmacy. A B.A. or B.S. degree is required prior to admission to the program. A sample outline of the curriculum is listed in the following pages. The degree will be conferred when the student has successfully completed all Doctor of Pharmacy degree requirements.

Application Procedure

The School of Pharmacy uses both the Pharmacy College Application Service (PharmCAS) and a supplemental application for its admission process. Supplemental applications are available at pharmacyschool.usc.edu.

Both the PharmCAS and the supplemental applications are due November 1. Follow the instructions carefully for the PharmCAS application and the supplemental application for the USC School of Pharmacy. Both applications must be received by the Office of Admission and Student Affairs before the evaluation process can begin. An on-campus interview is required for admission. Only applicants and documents are evaluated for an interview. Applicants are encouraged to apply well before the November 1 deadline to allow time for file review. Only the most qualified applicants will be granted interviews.

All documents mailed directly to the School of Pharmacy and received from PharmCAS by the Office of Admission become the property of the university and cannot be returned or duplicated for other than USC's purposes.

Admission Guidelines

The Admission Committee considers several factors in making admissions decisions: strong academics; performance in the interview; letters of recommendation; and written sections in the application. The committee also considers a candidate's motivation to pursue pharmacy, interpersonal skills, oral and written communication skills, and leadership abilities. While the School of Pharmacy gives equal consideration to every qualified applicant, the school cannot accommodate all qualified candidates who apply for admission.

Admission of International Students

Applicants for the School of Pharmacy's Doctor of Pharmacy (Pharm.D.) program holding international visas should contact the USC School of Pharmacy for information.

Entrance Requirements

Admission to the School of Pharmacy requires completion of a baccalaureate degree, completion of the specified prerequisite college courses, a minimum 3.0 (A = 4.0) cumulative grade point average and a minimum 3.0 grade point average in the prepharmacy prerequisites.

Prepharmacy Requirements

To be eligible for admission to the School of Pharmacy, students must take required prerequisite college courses, including general chemistry, organic chemistry, general biology, physics, biochemistry, upper-division molecular biology or cell biology, microbiology, human anatomy, calculus, statistics, a social sciences course related to human behavior, and a course in microeconomics. The science requirements should be completed at an accredited four-year university. All other requirements may be completed at a two-year college.

Grades of pass/no pass or credit/no credit will not be accepted (unless a course is only offered on a pass/no pass basis).

Mathematics and Physical Sciences

Courses must include calculus, statistics, general chemistry, organic chemistry and physics. Only courses for science majors are acceptable. It is highly recommended that math and science courses be completed during the regular academic year and not during a summer term.

Calculus: one semester or two quarters of calculus are required. The course should include differential and integral calculus for science majors. The recommended course at USC is MATH 125.

Statistics: One course in statistics (not business statistics) is required.

General chemistry: a one-year course for science majors, including laboratory, is required. The course should include inorganic chemistry and qualitative analysis. The recommended courses at USC are CHEM 105a**LbL**.

Organic chemistry: a one-year course for science majors, including laboratory, is required. If the school offers less than a one-year course, the student must complete the second semester at another institution. The recommended courses at USC are CHEM 322a**L**.

Physics: a one-semester (two quarters) course in physics for science majors with laboratory is required (inclusion of thermodynamics and electromagnetism is recommended). The recommended courses at USC are PHYS 135a**L** or PHYS 151L and PHYS 152L.

Biological Sciences

General biology: a one-year course (two semesters, three quarters) for science majors is required in general biology with laboratory (excluding courses in human anatomy, human physiology, botany and microbiology). If the school offers less than a one-year course, the student must complete the second semester at another institution. The recommended courses at USC are BISC 120L**x** and BISC 220L.

Microbiology: one course in fundamental microbiology for science majors is required. The recommended course at USC is BISC 300L. Lab is recommended.

Molecular or cell biology: one upper division course in molecular or cell biology for science majors is required. The recommended course at USC is BISC 320L or BISC 411.

Biochemistry: one upper division course in biochemistry for science majors is required. The recommended course at USC is BISC 330L.

Human anatomy: one course in human anatomy for science majors is required (courses in plant anatomy and cell physiology cannot be used to meet this requirement). A combined anatomy and physiology course is acceptable if a full academic year (two semesters or three quarters) is completed.

Social and Behavioral Sciences

One course in human behavior (psychology, sociology, cultural anthropology or related courses is required).

Economics: one course in microeconomics is required. If a one-year course is offered, both semesters may be taken and excess units may be applied to either the remainder of the unit requirements for the subject area or as elective units. The equivalent course at USC is ECON 203.

Advanced Placement and International Baccalaureate Examinations

Applicants can use AP and IB courses to meet certain USC School of Pharmacy prerequisites with the following provisos. AP results are acceptable with scores of 4 or 5. IB results are acceptable with a score of 5 for a maximum of one semester/one quarter of general chemistry or general biology. A maximum of 2 AP course credits will be accepted. AP/IB courses used to meet prerequisites will be for course credit only (i.e., they will not count toward the GPA). The Admission Committee recommends that applicants enroll in all of the required pre-pharmacy courses. Please contact the School of Pharmacy Office of Admission for specific information.

Entrance Examination

An in-person interview is required for admission. The PCAT is not required.

Special Admission Program for Entering Freshmen and Current Undergraduates

The Trojan Admission Prepharmacy (TAP) program provides priority admission to the USC School of Pharmacy's four-year Doctor of Pharmacy (Pharm.D.) program for USC undergraduates who are accepted to the program. Students must meet specific criteria including a B.A./B.S. degree, academic standards and an interview for admission. The TAP program is designed to attract highly qualified, mature high school seniors applying to USC. A specific listing of USC courses and a recommended program for TAP participants can be obtained from the School of Pharmacy Office of Admission or online at pharmacyschool.usc.edu/programs/pre/tap.

General Education Requirements (TAP Students Only)

TAP students must meet the university's general education requirements; see pages xx and xx for details.

Pharm.D. Curriculum Requirements

The completion of a four-year professional curriculum is required for admission to the Doctor of Pharmacy degree. The curriculum is a "block" program. All students must enroll in 18 units each semester. Students do not have a choice of the courses to take. (Year III and IV students have elective course choices.) Progress is permitted only when the prior semester is successfully completed. Students should view the curriculum outlined here as advisory only and subject to modification. A minimum of 144 units is required for graduation.

The pharmacist of tomorrow will provide preventive and therapeutic pharmaceutical care, provide drugs to patients, communicate in health care matters, meet the ethical and legal requirements of the practice of pharmacy and maintain professional expertise.

The curriculum committee of the School of Pharmacy has developed guidelines and patient care competencies consistent with interpretations of this new role. An appropriate and dynamic educational program is needed to develop these competencies. Therefore curriculum changes may be necessary in order to meet scientific advances, population profile changes, increasing health expectations, technological advances, or changes in health services.

Sample Program of Courses (Subject to Change)

YEAR I, FALL (18 UNITS)		UNITS
PHRD 501	Pharmaceutics I	4
PHRD 503	Biological Systems I	4
PHRD 507	Health Care Delivery Systems	2
PHRD 509	Pharmacy Practice and Experience I	4
PHRD 555	Biochemical and Molecular Sites of Drug Action	4
YEAR I, SPRING (18 UNITS)		UNITS
PHRD 502	Pharmaceutics II	3
PHRD 504	Biological Systems II	6
PHRD 505	Molecular Genetics and Therapy	3

PHRD 510	Pharmacy Practice and Experience II	4
PHRD 554	Public Health and Epidemiology	2

YEAR II, FALL (18 UNITS)		UNITS
PHRD 506	Self Care and Non-Prescription Therapies	5
PHRD 508	Pharmacy Literature Analysis and Drug Information, or	
PHRD 561	Parenteral Therapy Externship	3
PHRD 551	Immunology	3
PHRD 557	Therapeutics I: Introductory Principles	4
PHRD 559	Therapeutics II: Pharmacokinetics	3
YEAR II, SPRING (18 UNITS)		UNITS
PHRD 552	Pharmaceutics III	3
PHRD 553	Management Within Health Care Organizations	2
PHRD 560	Therapeutics III	6
PHRD 561	Parenteral Therapy Externship, or	
PHRD 508	Pharmacy Literature Analysis and Drug Information	3
PHRD 562	Therapeutics IV	4

YEAR III, FALL (18 UNITS)		UNITS
PHRD 601	Therapeutics V	6
PHRD 603	Therapeutics VI	3
PHRD 605	Therapeutics VII	4
PHRD 607	Nutrition	2
Elective (one course)		3
YEAR III, SPRING (18 UNITS)		UNITS
PHRD 606	Therapeutics VIII	2
PHRD 608	Therapeutics IX	2
PHRD 610	Therapeutics X	3
PHRD 612	Therapeutics XI	2
PHRD 614	Pharmaceutical Economics and Outcome Studies	3
PHRD 616	Pharmacy Law and Ethics	3
Elective (one course)		3

YEAR III, FALL (18 UNITS)		UNITS
PHRD 601	Therapeutics V	6
PHRD 603	Therapeutics VI	3
PHRD 605	Therapeutics VII	4
PHRD 607	Nutrition	2
Elective (one course)		3

YEAR III, SPRING (18 UNITS)		UNITS
PHRD 606	Therapeutics VIII	2
PHRD 608	Therapeutics IX	2
PHRD 610	Therapeutics X	3
PHRD 612	Therapeutics XI	2
PHRD 614	Pharmaceutical Economics and Outcome Studies	3
PHRD 616	Pharmacy Law and Ethics	3
Elective (one course)		3

Year III students must choose their electives from the following (3 units each):

PHRD 651	Community Pharmacy I	
PHRD 652	Community Pharmacy II	
PHRD 653	Health Systems Pharmacy I	
PHRD 654	Health Systems Pharmacy II	
PHRD 655	Geriatric Pharmacy I	
PHRD 656	Geriatric Pharmacy II	
PHRD 657L	Basic Research Design	
PHRD 658	Sleep and the Pharmacologic Management of Its Disorders	
PHRD 659	Molecular Therapeutics: Signal Transduction	
PHRD 660	Disease State Management I	
PHRD 661	Pharmacy Practice in Women's Health	
PHRD 662	Psychiatric Pharmacy Practice	
PHRD 663	Pharmaceutical Development	
PHRD 664	Clinical Problem Solving	
PHRD 665	Complementary/Alternative Therapeutics	
PHRD 666	Therapeutic Drug Monitoring	
PHRD 667	Drugs of Abuse	

PHRD 668	Computing Application	
PHRD 669	Health Care Needs of Special Populations	
PHRD 670	Marketing and Development in the Pharmaceutical Industry	
PHRD 675	Travel Medicine	
PHRD 677	Risk Assessment and Management in Pharmacy Practice	

YEAR IV, FALL (18 UNITS)

Required Clerkships
Elective Clerkships

YEAR IV, SPRING (18 UNITS)

Required Clerkships
Elective Clerkships

Required Clerkships (6 units each) — four rotations:

PHRD 701	Acute Care Clinical APPE
PHRD 705	Community Pharmacy APPE
PHRD 704	Primary Care APPE
PHRD 718	Hospital Pharmacy Practice Clerkship, or one course listed below with**

Elective Clerkships — two rotations (limit of one course that does not involve direct patient care):

PHRD 702**	Inpatient Psychiatric Pharmacy Clerkship
PHRD 703	Long Term Care Clerkship
PHRD 706	Geriatrics Clerkship
PHRD 707	Outpatient Psychiatric Pharmacy Clerkship
PHRD 708**	Inpatient Clinical Practice Clerkship
PHRD 709**	Pediatric Drug Therapy Clerkship
PHRD 710**	Surgery Clerkship
PHRD 711**	Cardiovascular Drug Therapy Clerkship
PHRD 712**	Applied Clinical Pharmacokinetics Clerkship
PHRD 713**	Drug Information Clerkship
PHRD 714*	Radiopharmacy Clerkship
PHRD 715**	Oncology Clerkship
PHRD 716**	Ob-Gyn Clerkship
PHRD 719	Pain Management Clerkship
PHRD 720**	Critical Care Clerkship
PHRD 721*	Drug Utilization and Evaluation Clerkship
PHRD 722	Home Health Care Clerkship
PHRD 723**	Nutritional Support Clerkship
PHRD 724	Advanced Community Pharmacy Clerkship
PHRD 725*	International Pharmacy Clerkship
PHRD 726*	Directed Clinical Clerkship Project I
PHRD 727	Directed Clinical Clerkship Project II
PHRD 728	Directed Clinical Clerkship Project III
PHRD 729	Directed Clinical Clerkship Project IV
PHRD 730	Acute Care Geriatrics Clerkship
PHRD 731	Advanced Geriatrics Clerkship
PHRD 732*	Pharmacy Administration Clerkship
PHRD 733	Anticoagulation Therapy Clerkship
PHRD 734	Antimicrobial Therapy Clerkship
PHRD 735	Clinical Pharmacy Research Clerkship
PHRD 736*	Chemical Dependency Clerkship
PHRD 737	Clinical Transplantation Clerkship
PHRD 738	Pharmaceutical Industry Clerkship

PHRD 739	AIDS/Immune Disorders Clerkship
PHRD 740*	Health Care Systems Administration Clerkship
PHRD 741	Advanced Primary Care Clerkship
*Indicates course does not involve direct patient care.	

Total for Pharm.D. degree: 144 semester units

Degree Requirements

All students in the Doctor of Pharmacy degree program must meet course requirements, grade point average requirements and program residency requirements. All course requirements must be completed with a grade of

"C" or better. The degree will not be conferred until the student has successfully completed all Doctor of Pharmacy degree requirements. Students are subject to the degree requirements in the *USC Catalogue* current for the semester of their admission into the Doctor of Pharmacy program. Students must have a cumulative grade point average of 3.0 in the Pharm.D. curriculum to meet graduation requirements.

Registration

Details of the School of Pharmacy registration procedure will be included in the orientation program prior to the first week of classes.

Cancellation of Registration

During the first three years of the Doctor of Pharmacy program (Years I, II and III), a student will only be permitted to withdraw from all courses enrolled in a semester and may not selectively withdraw from a single course or group of courses. During the fourth year, students must contact the School of Pharmacy Office of Admission and Student Affairs for withdrawal guidelines. Procedures for readmission into the program or make-up of incomplete courses are included in the school's brochure on academic policies and procedures.

Graduate Degrees

The School of Pharmacy, through the Graduate School, offers curricula leading to the M.S. and Ph.D. degrees in pharmaceutical sciences, in molecular pharmacology and toxicology, and in health economics, as well as a Ph.D. in clinical and experimental therapeutics. The school also offers interdisciplinary M.S. degrees in regulatory science and in the management of drug development. The M.S. degree in pharmaceutical economics and policy is offered jointly with the USC Price School of Public Policy and the Department of Economics. In addition, the school offers dual degrees with the schools of law, business, gerontology and medicine as well as other programs. Instructions given in the Admission section of this catalogue are to be followed, but the application and the supplemental information requested should first be submitted to: Graduate Programs Office, USC School of Pharmacy, 1985 Zonal Avenue, Los Angeles, CA 90033. Additional information may be obtained by calling (323) 442-1474 or sending email to pharmgrd@usc.edu.

Admission Requirements for the Master of Science and Doctor of Philosophy in Pharmaceutical Sciences

Applicants should possess a bachelor's degree or equivalent from an accredited college or university. A minimum grade point average of 3.0 and qualifying scores on the GRE in the verbal and quantitative tests are required. In addition to excellent communication skills, applicants should possess knowledge and competence equivalent to one year of acceptable course work in at least three of the following disciplines: mathematics, organic chemistry, physical chemistry, biochemistry, physiology and pharmacology. In addition to the application for admission, three letters of recommendation from faculty members who can evaluate the promise of the applicant for graduate study and a personal statement summarizing career objectives and research interests must be submitted.

Applicants who do not meet all the specific requirements indicated above, but who show unique potential, may be considered for admission with conditions which may be fulfilled during the first semester of enrollment. See the Graduate School section of this catalogue, page xx.

Admission Requirements for the Master of Science and Doctor of Philosophy in Molecular Pharmacology and Toxicology

Applicants should possess a bachelor's degree or equivalent from an accredited college or university. A minimum grade point average of 3.0 and qualifying scores on the GRE in verbal and quantitative tests are required. In addition to excellent communication skills, applicants should possess knowledge and competence equivalent to one year of work in at least three of the following disciplines: mathematics, organic chemistry, physical chemistry, biochemistry, molecular biology, cell biology, physiology, pharmacology, economics, statistics and computer sciences. In addition to the application for admission, the candidate must submit three letters of recommendation from faculty members who can evaluate the promise of the applicant for graduate study and a personal statement summarizing the candidate's career objectives and research interests. Students will be selected for admission on the basis of their academic and scientific record, and, whenever possible, interviews (in person or by phone) with one or more members of the faculty.

Admission Requirements for the Master of Science in Pharmaceutical Economics and Policy

Applicants for admission must have achieved a minimum 3.0 GPA in undergraduate or professional school and adequate scores on the GRE. In addition, applicants will be required to have completed upper division courses in statistical methods, calculus and microeconomics.

Admission Requirements for the Doctor of Philosophy in Clinical and Experimental Therapeutics

Applicants should possess a bachelor's degree in quantitative/biological sciences (or health profession) or an advanced health professional degree (i.e., Pharm.D., M.D., DDS) from an accredited college or university. A minimum grade point average of 3.0 and qualifying scores on the GRE in the verbal and quantitative tests are required. A student currently enrolled in the Pharm.D. program may pursue a Pharm.D./Ph.D. dual degree following the admission procedure in the Catalogue.

In addition to the application for admission, three letters of recommendation from faculty members who can evaluate the promise of the applicant for graduate

study and a personal statement summarizing career objectives and research interests must be submitted.

Applicants who do not meet all the specific requirements indicated above, but who show unique potential, may be considered for admission with conditions, which may be fulfilled during the first semester of enrollment. See the Graduate School section, page xx, of this catalogue for further information.

Admission Requirements for the Doctor of Philosophy in Health Economics

Candidates with a bachelor's, master's or Pharm.D. degree are invited to apply. Applicants must have demonstrated proficiency in verbal and written English and aptitude in economics, mathematics, statistics and computer science. Deficiencies in economics and statistical background can be addressed through preliminary course work after admission to the program.

A minimum grade point average of at least 3.0 (A = 4.0) is required. Special attention is given to the grades achieved in economics, statistics and mathematics courses relevant to the program. A qualifying score on the GRE in verbal and quantitative areas is required. Students with GRE scores of 1200 or better will be given priority for financial aid support.

Admission Requirements for the Master of Science in Health Care Decision Analysis

Applicants should possess a bachelor's degree or equivalent from an accredited college or university. Applicants with graduate or professional degrees are encouraged to apply. A minimum grade point average of 3.0 and qualifying scores on the GRE examination are required. The program encourages the participation of part-time students with work experience. Acceptance criteria for those individuals will be assessed on a case-by-case basis. English proficiency is essential. Additional requirements for international students are outlined by university regulations under Admission of International Students.

Admission Requirements for the Master of Science in Regulatory Science

Applicants should possess a bachelor's degree or equivalent from an accredited college or university. Applicants with graduate or professional degrees are encouraged to apply. A minimum grade point average of 3.0 or qualifying scores on the GRE or equivalent examination are required. The program encourages

the participation of part-time students with work experience.

Acceptance criteria for those individuals will be assessed on a case-by-case basis. English proficiency is essential. Students will be selected for admission, whenever possible, after interviews with one or more members of faculty.

Admission Requirements for the Master of Science in Management of Drug Development

Applicants should possess a bachelor's degree or equivalent from an accredited college or university. Applicants with graduate or professional degrees are encouraged to apply. A minimum grade point average of 3.0 or equivalent and qualifying scores on the GRE or equivalent examination are required. The program encourages the participation of part-time students with work experience. Acceptance criteria for those individuals will be assessed on a case-by-case basis. English proficiency is essential.

Admission of International Students to Graduate Degree Programs

All requirements described in this section are also applicable to the admission of international students. In addition, special application and admission procedures are required of international students. Refer to the section on Admission of International Students in this catalogue.

Degree Requirements

These degrees are under the jurisdiction of the Graduate School. Students should also refer to the Requirements for Graduation section, page xx and the Graduate School section of this catalogue for general regulations, page xx. All courses applied toward the degrees must be courses accepted by the Graduate School.

Master of Science in Pharmaceutical Sciences

A Master of Science in the pharmaceutical sciences will be granted on the basis of completion of at least 24 units of formal course work and presentation of an acceptable thesis (PSCI 594ab, 4 units) based on the results of an original investigation.

The 24 units of course work must be at the 500-level or above, exclusive of directed research. At least 16 of the 24 required units must be taken from courses offered within the Department of Pharmacology and Pharmaceutical Sciences (courses within the department have designations of either PSCI or MPTX). The remaining units can be taken from courses offered within the Department of Pharmacology and Pharmaceutical Sciences or in various related disciplines outside the department if approved by the Department of Pharmacology and Pharmaceutical Sciences Graduate Affairs Committee.

Master of Science in Molecular Pharmacology and Toxicology

A Master of Science in molecular pharmacology and toxicology will be granted on the basis of completion of at least 24 units of formal course work and presentation of an acceptable thesis (MPTX 594ab, 4 units) based on the results of an original investigation.

The 24 units of course work must be at the 500-level or above, exclusive of directed research. At least 16 of the 24 required units must be taken from courses offered within the Department of Pharmacology and Pharmaceutical Sciences (courses within the department have designations of either PSCI or MPTX). The remaining units can be taken from courses offered within the Department of Pharmacology and Pharmaceutical Sciences or in various related disciplines outside the department if approved by the Department of Pharmacology and Pharmaceutical Sciences Graduate Affairs Committee.

Master of Science in Pharmaceutical Economics and Policy

The Department of Pharmaceutical Economics and Policy (School of Pharmacy) offers a program of study leading to the M.S. degree. Applicants must apply to the Graduate School and meet the admissions requirements of the program. This program requires students to demonstrate skills in the analysis of pharmaceutical and health technology innovations, as well as an understanding of contemporary health policy issues.

A minimum of 36 units of graduate level courses is required.

Grade Point Average

A grade point average of at least 3.0 (A = 4.0) must be achieved on graduate course work at USC.

Recommended Courses

It is recommended that the student complete the following 36 units of graduate level course work: ECON 414 (4 units), ECON 500 (4 units) or PPD 501ab (4 units), PM 511aL (4 units), PM 512 (4 units) or approved elective, PMEP 509 (4 units), PMEP 519 (4 units), PMEP 529 (4 units), PMEP 538 (4 units) and PMEP 539 (4 units).

Students must complete all recommended courses for the degree within five years of entry into the program.

Additional Degree Requirements

The student must satisfactorily complete the recommended courses in economics, preventive medicine and public administration prior to enrolling in PMEP 538. The student is also required to complete an empirical research project on a topic relevant to pharmaceutical economics and policy.

Master of Science in Health Care Decision Analysis Curriculum Requirements

A Master of Science degree in health care decision analysis will be granted upon completion of at least 33 units of formal course work. Students with experience in industry or government can substitute an equivalent amount of formal course work with a research project, subject to the approval from program administrators.

Course requirements normally include a minimum of eight courses (24 units) with emphasis on applied health care policy, business intelligence and technical analysis. Recommended course work and electives include some courses available in other departments of the university and will be selected in consultation with the program advisers according to the areas of intended specialization of the participant in order to meet the credit requirements of the program. Students should develop a

specific plan of study in consultation with the graduate advisers before beginning the program.

Grade Point Average

A grade point average of at least 3.0 (A = 4.0) must be achieved on graduate course work at USC.

Master of Science in Regulatory Science

Regulatory science relates the regulatory and legal requirements of biomedical product development to the scientific study needed to establish product safety and efficacy. A Master of Science degree in regulatory science will be granted upon completion of at least 30 units of formal course work and 6 units of research project work in an internship setting (MPTX 630). Students with experience in industry or government can substitute an equivalent amount of formal course work for the research project with the permission of the admissions committee. Course requirements normally include a minimum of three courses concerned with regulatory aspects of medical product development and a minimum of one course each in quality assurance, clinical research, business, statistics and law. Recommended course work includes some courses available in other departments of the university. Students should develop a specific plan of study in consultation with the graduate advisers before beginning the program.

Master of Science in Management of Drug Development

A Master of Science degree in the management of drug development will be granted upon completion of at least 32 units of course and research project work. The program is offered on both a full-time and part-time basis, and courses are also available in distance formats. Most students will take six units of directed research as part of this program. Students with appropriate industry or laboratory experience can substitute an equivalent amount of formal course work for the research project with the permission of the program director. Course requirements normally include a minimum of three courses concerned with translational aspects of medical product development. Recommended courses to satisfy this core requirement include RSCI 530, RSCI 531, RSCI 532, PSCI 664 or CXPT 609. The program must also include a minimum of one course in each of: regulatory science, quality assurance, clinical research, business and statistics. Students should develop a specific plan of study in consultation with graduate advisers before beginning the program.

Doctor of Regulatory Science

The Doctor of Regulatory Science program cultivates research, leadership and inquiry skills for advanced students in the emerging profession of global regulatory science. It is designed to produce graduates with expertise in strategic management, policy development and research assessment who can play leadership roles in the public sector, academia and the medical products industry. Participants in this program will take a set of interdependent courses that extend from a strong core of basic regulatory science course work and additionally focus on three main areas — global product strategy, product lifecycle strategy, and project and personnel management. After students have completed

foundational course work, they will participate as a cohort that typically has a two-year cycle of classes and an additional year of dissertation research. The program has been designed to meet the needs of individuals who are already working full-time outside of the university. The doctoral degree will be administered by the School of Pharmacy.

Admission

The program is designed for individuals with strong professional experience and demonstrated intellectual and leadership capabilities. Applicants are expected to have a GPA of 3.0 on university-level course work and five or more years of professional experience. Admission requirements include university transcripts, a resume, at least three letters of reference, and a one-page personal statement that outlines the background and goals of the applicant. Students are encouraged even at this early stage to identify areas in which they are interested in conducting research. Additional requirements for international students are outlined by university regulations under Admission of International Students, page xx. Students are not required to provide GRE scores unless indicated by the program director.

Students with an appropriate graduate or professional degree may use some previous graduate courses as transfer units toward the overall credit requirements of the Doctor of Regulatory Science program with the approval of the program director and under the normal rules of the university. Students who have graduated from the M.S. program in Regulatory Science can apply all of the previously taken course work toward the doctoral degree. Students with graduate degrees from outside of the regulatory science program are required to take a minimum of 32 units of course work and 4 units of dissertation research to complete the requirements for graduation. The course work requirements will be determined on an individual basis in consultation with the program director and participant's advisers.

Curriculum Requirements

The Doctor of Regulatory Science is administered by the School of Pharmacy. It requires participants to complete 64 units that include the following elements:

REQUIREMENTS	UNITS
Foundation courses	15
Product lifecycle strategy	8
Global strategy	8
Project/personnel management	8
Research methods	4
Dissertation	4

Additional elective course work will be selected in consultation with the program advisers according to the areas of intended specialization of the participant in order to meet the credit requirements of the program. Typically foundational courses and some electives will be taken in the first two years of the program. Advanced courses in product lifecycle strategy, global strategy and project/personnel management will normally be taken by the doctoral cohort of students during the third and fourth years of the program. Dissertation planning and research will typically commence in the third year of the program, and extend until the successful completion of the dissertation.

Foundation Courses

Fifteen or more units of foundation courses may be taken as part of the master's program in regulatory science, or with prior approval, from another graduate program with similar objectives. Required foundational courses normally include: MPTX 511 Introduction to Medical Product Regulation; two from MPTX 512 Regulation of Pharmaceutical and Biological Products, MPTX 513 Regulation of Medical Devices and Diagnostics, MPTX 514 Regulation of Food and Dietary Supplements; MPTX 515 Quality Systems and Standards; MPTX 516 Medical Products and the Law; MPTX 517 Structure and Management of Clinical Trials. Other courses may be substituted after the participant's background preparation has been considered.

Product Lifecycle Strategy

Eight or more units of course work related to product lifecycle management, from discovery to commercialization, will be drawn from a broad list of courses offered in regulatory science or through the Titus Family Department of Clinical Pharmacy and Pharmaceutical Economics and Policy. Included in this list are: PMEP 538 Pharmaceutical Economics; PMEP 539 Economic Assessment of Medical Care; RSCI 601 Biomedical Commerce. Other courses may also be considered in consultation with the supervisors and program director. Students are also encouraged to take courses outside the School of Pharmacy when more specialized courses fit their professional research or development plans.

Global Regulatory Strategy and Policy

Eight or more units of course work related to global regulatory strategy could include some of the following courses: MPTX 519 Global Regulation of Medical Products; PPD 571 International Public Policy and Management Seminar; RSCI 604 Regulatory Strategy in Asia; RSCI 608 Regulatory Strategy in Europe and the Americas.

Project and Personnel Management

Eight or more units of relevant course work should typically include: MPTX 602 Science, Research and Ethics; RSCI 603 Managing Complex Projects; RSCI 605 Managing Organizations and Human Resources. Graduate courses in other university departments or schools can be substituted with the approval of the program director.

Research Methods

Participants will typically take PMEP 509 Research Design or MPTX 522 Introduction to Clinical Design and Statistics.

Student Progress and Assessments

In the third year, students are expected to identify a pair of advisers including one USC faculty member and one adviser from industry or the private sector. Students are typically placed in study groups of three or four whose dissertation interests are most similar and whose collective supervisors will oversee their academic and research progress. This committee will form the dissertation committee.

At the completion of the foundational course work, students will undergo a competency review that will include considerations of academic progress. Students

are expected to maintain a GPA of 3.0 and will be required to pass a written examination designed to assure the professional competence of the student prior to advancing further in the program. Students who do not pass this preliminary review, administered prior to entering the dissertation and advanced course work phase of the program, will be notified of dismissal from the program in writing by the associate dean for graduate studies in the School of Pharmacy.

Doctoral Dissertation

Students must enroll in RSCI 794 Doctoral Dissertation for at least two terms, during which time they will develop a dissertation proposal and conduct the necessary research and analysis in collaboration with the supervisory team. The dissertation committee will approve the thesis plan and monitor its progress. Each student will be required to produce and defend an independent dissertation as a requirement for graduation. A maximum of 6 dissertation units can be applied to satisfy the degree requirement, but students should register for the dissertation units in each term subsequent to the completion of their course work requirements. Institutional Review Board approval is required for all human studies.

Doctor of Philosophy in Clinical and Experimental Therapeutics

The goal of the Ph.D. program in Clinical and Experimental Therapeutics is to develop a scientist who is engaged in team science through interdisciplinary education; competent in conducting research across clinical and basic science disciplines; and integrates basic investigations and clinical observations in applied research to better understand disease process, advance drug development and evaluate efficacy and toxicity of therapeutic regimens with the goal of improving the safe, effective and economical use of therapeutic modalities by patients.

The program applies an interdisciplinary approach that focuses the graduate studies directly toward translational, rather than basic science, aiming to educate students with the perspective and skill set to identify important connections between fundamental biomedical research and human disease. This program emphasizes cross-training between clinical and basic sciences focusing on the investigation of disease processes, drug development and the efficacy and toxicity of therapeutic regimens. Course requirements and research opportunities for graduate students enrolled in the program provide both experimental (basic) and disease-focused experiences that complement the graduate's research focus.

Course Requirements

A minimum of 60 units is required. At least 26 of the 60 units are to be formal graduate course work at the 500-level or above, exclusive of seminars and directed research. Students must complete 14 units of course work before they are eligible for the screening procedure. Additional course work relevant to the research interests of the student may be required by the student's advisers or the student's qualifying exam committee, with an emphasis on cross-training and taking into account the amount and level of previous scientific preparation and the nature of the research dissertation

that will be the major endpoint of the program. Specifically, recommended course work differs between students who have an advanced professional degree (Track I) and those who do not (Track II). A maximum of 12 units may be transferred from graduate studies elsewhere.

In the first year, all students (Tracks I and II) are recommended to take 14 units of course work in translational medicine (RSCI 530, 2 units), research design (CXPT 609, 4 units), biostatistics (PM 510L, 4 units), and clinical trial design (MPTX 517, 4 units). In the second year, Track I students will take the remaining 12 units of course work as electives based on the background of the student and the proposed research focus of the student. Track II students who do not have an advanced professional degree are recommended to select from the following courses as part of their electives: systems physiology and disease (INTD 572 and INTD 573, 4 units each) or pathology (INTD 550 and INTD 551, 4 units each). Other electives that can be chosen are INTD 531, INTD 561, PATH 580, PM 533, PM 538, PM 570, PSCI 661L and PSCI 665.

The remaining 34 of the 60 units required for the Ph.D. degree may be fulfilled with other courses including ethics, interdisciplinary seminar, directed research and dissertation. Note that to become eligible to take the qualifying exam, Track II students must fulfill the prescribed clinical experiences that match the disease-related topic of the student's thesis work as approved by the student's advisers and advisory committee. Students with a bachelor's degree in a health care subject area (e.g., nursing, pharmacy, medicine) will be evaluated on a case basis and may be required to meet the therapeutic course work or clinical experience component described above, as determined by their background and previous experiences.

Foreign Language Requirement

There is no formal language requirement. However, an individual qualifying exam committee can require competency in a foreign language or a computer language if it is relevant for the student's area of research.

Qualifying Exam Committee

Upon admission, the student will be assigned to a member of the graduate faculty who will serve as his or her temporary adviser until a permanent adviser has been identified. The student's program of study will be under the direction of the qualifying exam committee composed of at least five members, one of whom must be from outside the department. Because of the centrality of research in the Ph.D. program, the student is encouraged to get acquainted with the participating faculty mentors from the day they enter the program, and have selected a research direction, paired graduate advisers (clinical and basic scientists), and qualifying exam committee no later than the third semester of study. The graduate affairs committee will serve as the qualifying exam committee until one is selected.

Screening Procedure

The performance of each student will be evaluated no later than the end of the second semester of enrollment in the graduate program. This screening procedure is conducted by the student's qualifying exam committee or, if a student has not yet selected a qualifying exam committee, by the graduate affairs committee.

The committee reviews the student's progress to date in various areas including course work, research interests, and laboratory performance on his or her research project or laboratory rotations. If a performance deficiency is determined, specific goals will be established that the student must fulfill to continue in the program. Passing this screening procedure is prerequisite to continuation in the Ph.D. program.

Qualifying Examination

Students will be required to pass a comprehensive written and oral examination on the chosen disease-focused area of research emphasis. The examination will encompass basic scientific concepts relevant to the disease under study and the laboratory techniques in that discipline, fundamental principles of clinical research and design, biostatistics, and therapeutics in the chosen disease-focused area of research. The examination is administered by the qualifying exam committee and consists of two parts: a written examination administered to all students at the end of their second year of study and a detailed written proposal and its oral presentation and defense by the student to the qualifying exam committee. The examination process is conducted by the student's advisory committee with oversight by the graduate affairs committee. All course and qualifying examination requirements for the Doctor of Philosophy must be completed within two-and-a-half years after admission. After passing these examinations, the student is admitted to candidacy for the Ph.D. degree.

Dissertation

A dissertation based on original investigation in a relevant scientific area is required for the Ph.D. The dissertation research must represent a significant contribution to science and should demonstrate the candidate's scholarly advancement and competence to undertake independent research. An oral defense of the dissertation will be held after the candidate submits the final draft of the dissertation to the dissertation committee. (See Theses and Dissertations in the Graduate School section, page xx.)

Student Teaching

Teaching experience is considered an integral part of the training of graduate students. As part of the general requirements for the Ph.D. degree, each student is required to participate in the teaching program of the School of Pharmacy.

Doctor of Philosophy in Health Economics

The Titus Family Department of Clinical Pharmacy and Pharmaceutical Economics and Policy (School of Pharmacy) offers a program of study leading to the Ph.D. degree in Health Economics. The program focuses on microeconomics; econometrics; health economics and policy; public finance; pharmaceutical economics and policy. The program offers one track in microeconomics and a second track in pharmaceutical economics and policy.

Microeconomics Track

Students in the microeconomics track will complete the microeconomic theory and econometric sequence and course work in health economics. They will receive

focused training and mentoring in health economics through collaboration on research projects.

Foreign Language Requirement

There is no formal foreign language requirement. However, competence in the use of one computer programming language is required for the graduate degrees. Such competence can be demonstrated either by course work or examination.

Grade Point Average

A grade point average (GPA) of at least 3.0 and typically considerably higher (on a scale of 4.0) must have been achieved on all graduate work at USC for the passing of the screening procedure. The Graduate School requires a minimum GPA of 3.0 on all course work taken as a graduate student at USC.

Unit Requirements and Recommended Courses

The Ph.D. in Health Economics requires a minimum of 64 units of graduate-level courses numbered 500 or higher (excluding 794) and a minimum of 4 units of 794. A maximum of two full courses (eight units) or their equivalent may be PMEP 790 (research) since directed research will generally be incorporated into most 500- and 600- level courses. Exceptions will be considered on an individual basis. Normally, a full-time graduate student course load is three full courses or their equivalent per semester, with a four-course maximum.

MICRO ECONOMICS TRACK		UNITS
Satisfactory completion of the economic theory sequence with a grade point average of B or higher.		
At least one of the econometrics courses must be completed with a grade of B or higher:		
ECON 503	Microeconomic Theory I (4), or	
GSBA 602	Selected Issues in Economic Theory (3)	3-4
ECON 511	Econometric Methods	4
ECON 514	Probability and Statistics for Economists	4
ECON 603	Microeconomic Theory II (4), or	
GSBA 603	Foundations of Statistical Inference (3)	3-4
ECON 615	Applied Econometrics	4
Satisfactory completion of the health economics sequence with a grade point average of B or higher:		
PMEP 509	Research Design	4
PM 511abL	Data Analysis	4
PMEP 519	Survey Research and Quality of Life Assessment	4
PMEP 529	Risk, Probabilities and Preferences	4
PMEP 534	Health Economics I	4
PMEP 544	Health Economics II	4
ECON 693	Seminar in Applied Economics and Public Policy, or	2, max 4
PMEP 698	Seminar in Pharmaceutical Economics and Policy	1 max 4

Three electives at the 500 level or higher from the School of Pharmacy's Health Economics Program and from the departments of economics, mathematical statistics, biometry, epidemiology, public administration, computer science or other relevant fields are required.

Qualifying Exam

The student will be assigned to a member of the graduate faculty who will serve as his or her temporary adviser until the formation of a qualifying exam committee. The student should consult the health economics director of graduate studies on the appointment of a Ph.D. qualifying exam committee after taking the written screening examinations. The chairman of the student's Ph.D. qualifying exam committee advises the student on matters of curriculum and graduate opportunities. The qualifying exam committee comprises three to five members, at least one of whom can be from outside the department; at least two members must specialize in the student's area of emphasis; and at least three of the members must be suitable for service on the student's dissertation committee. The composition of all Ph.D. qualifying exam committees must be approved by the health economics director of graduate studies. The student must form his or her qualifying exam committee soon after passing the departmental screening procedure.

Screening Procedure

The student's progress will be reviewed after each semester and before registration for any additional course work to determine if progress has been satisfactory. The screening procedure will include satisfactory performance on written screening exams covering the major topics covered in the recommended coursework for each track.

Seminar Requirements

Every student is recommended to take and satisfactorily complete 4 units of research seminars chosen from ECON 693, PMP 698 or the equivalent. At least one of these seminars must be related to the student's major field, and the same seminar may be taken more than once. Before completing the dissertation, it is recommended that the student present at least one original research paper in a seminar of his or her choice. This paper should typically consist of original results contained in the student's dissertation.

Dissertation Proposal Preparation

The student is required to register for two units of PMP 790 and write a research paper on a topic suitable for a dissertation. Typically, the chair of the student's guidance committee directs this work. The resulting essay becomes part of the student's written dissertation proposal which is presented and critiqued during the oral portion of the qualifying examination.

Qualifying Examination

Upon successful completion of the first two years of course and grade requirements, and following passing of required screening procedures, the student takes a general written and oral examination on the chosen area of research emphasis after presenting a detailed written dissertation proposal. After passing these examinations, the student is admitted to candidacy for the Ph.D. degree.

Dissertation

After admission to candidacy, the student forms a dissertation committee comprising three faculty members, one of whom can be from an outside department. The

chair of this committee is the dissertation supervisor. The student must register for PMP 794 each semester, excluding summer sessions, until the dissertation and all other degree requirements are completed.

The student is expected to complete a dissertation based on an original investigation. The dissertation must represent a significant contribution to knowledge and must be defended in an oral examination administered by the dissertation committee (see the section on Theses and Dissertations, page xx).

Student Teaching

Teaching experience is considered an integral part of the training of graduate students. As part of the general requirements for the Ph.D., all students are required to undergo training as an educator. This will include participating in seminars on educational techniques and hands-on teaching experiences through participation in didactic and small group teaching in the School of Pharmacy or the USC Price School of Public Policy.

Pharmaceutical Economics and Policy Track

Students in the pharmaceutical economics and policy track will specialize in areas such as cost-effectiveness, comparative effectiveness, drug therapy outcomes and organization of pharmaceutical markets. They will receive focused training and mentoring in pharmaceutical economics and policy through collaboration on research projects.

Foreign Language Requirement

There is no formal foreign language requirement. However, competence in the use of one computer programming language is required for the graduate degrees. Such competence can be demonstrated either by course work or examination.

Grade Point Average

A grade point average of at least 3.0 (A = 4.0) must have been achieved on graduate course work at USC. ECON 615 or a higher level course in econometrics must be completed with a grade of B or higher.

Unit Requirements and Recommended Courses

Students are required to complete a minimum of 64 units of graduate level course work. The following courses are recommended towards fulfilling the 64-unit requirement: ECON 401, ECON 500, ECON 511, ECON 513, ECON 514, ECON 615, PM 511a, PMP 509, PMP 519, PMP 529, PMP 538, PMP 539, PMP 549 and PMP 698. Students may transfer and substitute up to 24 units of graduate course work from other universities to fulfill the required 64 units of graduate credit subject to the approval of the department.

	UNITS
Satisfactory completion of the economic theory sequence with a grade point average of B or higher.	
At least one of the econometrics courses must be completed with a grade of B or higher:	
ECON 401 Mathematical Methods in Economics	4
ECON 414 Introduction to Econometrics	4
ECON 500 Microeconomic Analysis and Policy	4

ECON 511	Econometric Methods	4
ECON 615	Applied Econometrics	4

Satisfactory completion of the pharmaceutical economics and policy sequence with an average grade of B or higher:

PMP 509	Research Design	4
PMP 519	Survey Research and Quality of Life Assessment	4
PMP 529	Risk, Probabilities and Preferences	4
PMP 538	Pharmaceutical Economics	4
PMP 539	Economic Assessment of Medical Care	4
PMP 549	Applied Pharmacoeconomics	4
PMP 698	Seminar in Pharmaceutical Economics and Policy	1, max 4

A minimum of three electives at the 500 level or higher from the School of Pharmacy's Pharmaceutical Economics and Policy Program and from the departments of economics, mathematical statistics, biometry, epidemiology, public administration, computer science or other relevant fields are required.

Guidance Committee

The student will be assigned to a member of the graduate faculty who will serve as his or her temporary adviser until the formation of a guidance committee. The student should consult the pharmaceutical economics and policy director of graduate studies on the appointment of a Ph.D. guidance committee after taking the written qualifying examination. The chairman of the student's Ph.D. guidance committee advises the student on matters of curriculum and graduate opportunities. The guidance committee comprises three to five members, at least one of whom can be from outside the department; at least two members must specialize in the student's area of emphasis; and at least three of the members must be suitable for service on the student's dissertation committee. The composition of all Ph.D. guidance committees must be approved by the pharmaceutical economics and policy director of graduate studies. The student must form his or her guidance committee soon after passing the departmental screening procedure.

Screening Procedure

The student's progress will be reviewed after each semester and before registration for any additional course work to determine if progress has been satisfactory. The screening procedure may include satisfactory performance on written screening exams covering the major topics covered in the recommended coursework for each track.

Seminar Requirements

Every student is recommended to take and satisfactorily complete 4 units of research seminars chosen from PMP 698 or the equivalent. At least one of these seminars must be related to the student's major field and the same seminar may be taken more than once. Before completing the dissertation, it is recommended that the student present at least one original research paper in a seminar of his or her choice. This paper should typically consist of original results contained in the student's dissertation.

Dissertation Proposal Preparation

The student is required to register for two units of PMEP 790 and write a research paper on a topic suitable for a dissertation. Typically, the chair of the student's guidance committee directs this work. The resulting essay becomes part of the student's written dissertation proposal which is presented and critiqued during the oral portion of the qualifying examination.

Qualifying Examination

Upon successful completion of the first two years of course work and grade requirements, including the passing of required screening procedures, the student takes a general written and oral examination on the chosen area of research emphasis after presenting a detailed written dissertation proposal. After passing these examinations, the student is admitted to candidacy for the Ph.D. degree.

Dissertation

After admission to candidacy, the student forms a dissertation committee comprising three faculty members, one of whom can be from an outside department. The chair of this committee is the dissertation supervisor. The student must register for PMEP 794 each semester, excluding summer sessions, until the dissertation and all other degree requirements are completed.

The student is expected to complete a dissertation based on original investigation. The dissertation must represent a significant contribution to knowledge and must be defended in an oral examination administered by the dissertation committee (see the section on Theses and Dissertations, page xx).

Student Teaching

Teaching experience is considered an integral part of the training of graduate students. As part of the general requirements for the Ph.D., all students are required to undergo training as an educator. This will include participating in seminars on educational techniques and hands-on teaching experiences through participation in didactic and small group teaching in the School of Pharmacy.

Doctor of Philosophy in Pharmaceutical Sciences

This program emphasizes basic as well as applied research in drug delivery and targeting, utilizing medicinal chemistry, computational chemistry, pharmaceuticals, pharmacodynamics, molecular pharmacology, immunology and cell biology.

A minimum of 60 units is required for the Doctor of Philosophy degree. At least 24 units of course work are required at the 500-level or above, exclusive of seminar and directed research. The qualifying exam committee may require more than 24 units of course work. A minimum of 12 units is to be taken in courses in the Department of Pharmaceutical Sciences and a minimum of 8 units must be taken in various related disciplines outside the department. The remaining 36 units may be fulfilled with other courses, directed research and dissertation.

Foreign Language Requirement

There is no formal foreign language requirement. However, an individual qualifying exam committee can require competency in a foreign language or some other

research tool such as computer language, if this is relevant for the student's area of research.

Qualifying Exam Committee

Upon admission, the student will be assigned to a member of the graduate faculty who will serve as his or her temporary adviser until a permanent adviser has been identified. The student's program of study will be under the direction of a qualifying exam committee composed of at least five members, one of whom must be from outside the department granting the degree. The student should select a graduate adviser and qualifying exam committee no later than the third semester in residence.

Screening Procedure

The performance of each student will be evaluated no later than the end of the second semester of enrollment in the graduate program. This screening procedure is conducted by the student's qualifying exam committee or, if a student has not selected his or her research adviser at that time, by the Graduate Review Committee of the department. The committee reviews thoroughly the student's progress up to that point in various areas including course work, research interests and laboratory performance on his or her research project or laboratory rotations. If a performance deficiency is detected at that point by the committee, the student will be recommended to either take additional course work or transfer to the Master of Science program. Passing this screening procedure is prerequisite to continuation in the Ph.D. program.

Qualifying Examination

Students will be required to pass a comprehensive qualifying examination in major areas of the pharmaceutical sciences. The examination is administered by the qualifying exam committee and consists of two parts: a written examination and a written proposition outlining a research project, followed by an oral examination based on the proposition and questions dealing with the written examination.

All course and qualifying examination requirements for the Doctor of Philosophy must be completed within two and one half years after admission.

Dissertation

A dissertation based on original investigation is required. The research should make a contribution to science and should demonstrate the candidate's scholarly advancement and competence to undertake independent research. An oral defense of the dissertation will be held after the candidate submits the final draft of the dissertation to the dissertation committee (see Theses and Dissertations, page xx).

Student Teaching

Teaching experience is considered an integral part of the training of graduate students. Thus, as part of the general requirements for the Ph.D., each student is required to participate in the teaching program of the School of Pharmacy.

Doctor of Philosophy in Molecular Pharmacology and Toxicology

This program emphasizes basic as well as applied research in various aspects of drug discovery and molecular and behavioral mechanisms of action. Research opportunities span investigations of fundamental molecular and cellular physiological mechanisms, including receptor activity, intracellular signaling and the regulation of gene expression, to the molecular bases of disease and aging, including avenues of pharmacological intervention.

A minimum of 60 units is required. At least 24 units of course work are required at the 500-level or above, exclusive of seminars and directed research. The qualifying exam committee may require more than 24 units of course work in some cases. The specific requirements will depend on the student's background and research area and will be determined by the student's adviser and advisory committee. A minimum of 12 units is to be taken in appropriate courses offered by the School of Pharmacy. The remaining 36 units may be fulfilled with other courses, directed research and dissertation. A maximum of 12 units can be transferred from graduate studies elsewhere.

Foreign Language Requirement

There is no formal language requirement. However, an individual qualifying exam committee can require competency in a foreign language or a computer language if it is relevant for the student's area of research.

Qualifying Exam Committee

Upon admission, the student will be assigned to a member of the graduate faculty who will serve as his or her temporary adviser until a permanent adviser has been identified. The student's program of study will be under the direction of a qualifying exam committee composed of at least five members, one of whom must be from outside the department. The student should select a graduate adviser and qualifying exam committee no later than the third semester in residence. The graduate affairs committee will serve as the qualifying exam committee until one is selected.

Screening Procedure

The performance of each student will be evaluated no later than the end of the second semester of enrollment in the graduate program. This screening procedure is conducted by the student's qualifying exam committee or, if a student has not yet selected a qualifying exam committee, by the graduate affairs committee. The committee reviews the student's progress to date in various areas including course work, research interests and laboratory performance on his or her research project or laboratory rotations. If a performance deficiency is determined, specific goals will be established that the student must fulfill to continue in the program. Passing this screening procedure is prerequisite to continuation in the Ph.D. program.

Qualifying Examination

Students will be required to pass a comprehensive qualifying examination in major areas of molecular pharmacology, including fundamental principles of molecular and cellular biology. The examination is administered by the qualifying exam committee and consists

of two parts: a written examination administered to all students at the end of their second year of study and a written proposal outlining the dissertation goals, and its oral presentation and defense by the student to the qualifying exam committee. The examination process is conducted by the student's advisory committee with oversight by the graduate affairs committee. The qualifying examination must be completed within three years after admission, unless an extension is obtained from the qualifying exam committee.

Annual Research Appraisal (ARA)

Beginning in the third year, each graduate student will meet with the qualifying exam committee and present a progress report on his or her research. Prior to the meeting the student will present a short written document describing significant experiments during the past year, problems and projected studies. This document is distributed to the committee members and is included in the student's file. The oral ARA meeting is intended to be a working session between the student and the qualifying exam committee. Experimental results and problems are discussed in this context, as well as a research plan for the next year of work. A satisfactory ARA is required for each year in the graduate program.

Dissertation

A dissertation based on original investigation in a relevant scientific area is required for the Ph.D. The dissertation research should demonstrate the student's ability to undertake independent research through planning, conducting and evaluating experiments. The dissertation research must represent a significant contribution to knowledge. A public oral defense of the dissertation will be held after the candidate submits the final draft of the dissertation to the dissertation committee, and it is approved by the graduate adviser and dissertation committee. For additional details, see *Theses and Dissertations*, page xx.

Student Teaching

Teaching experience is considered an integral part of the training of graduate students. As part of the general requirements for the Ph.D. degree, each student is required to participate in the teaching program of the School of Pharmacy.

Pharm.D./Juris Doctor Admission Requirements

Admission to the dual Pharm.D./J.D. program is competitive, and involves meeting admission requirements and gaining acceptance to both the School of Pharmacy and the USC Gould School of Law. Students will not be given special consideration for admission to either program because they are applying for the dual degree. Students who have a baccalaureate degree may apply to the dual Pharm.D./J.D. degree program in two ways. First, they may apply at the time they submit their Pharm.D. application by concurrently submitting applications to both schools. Students who elect this approach must identify themselves on their Pharm.D. applications as potential dual Pharm.D./J.D. degree students. Students who are admitted to both schools will be offered admission to the dual degree contingent on passing all courses in their first year of the Pharm.D. with a minimum 3.0 GPA. Students pursuing the dual

Pharm.D./J.D. degree must notify the law school in a timely fashion that they will be enrolling in the dual Pharm.D./J.D. degree program and will not matriculate at the law school until the following year. Students who are accepted by only one school may choose to attend that school but will not be eligible for the dual degree. Second, students can apply to the dual degree by submitting an application to the Gould School of Law during their first year of enrollment in the Pharm.D. program prior to the law school's published application deadline. Students who elect this approach must apply through the School of Pharmacy. Students who are admitted to the law school using this approach would be offered admission to the dual degree contingent on passing all courses in their first year of the Pharm.D. with a minimum 3.0 GPA. See the admissions section of the School of Pharmacy and the Gould School of Law for specific requirements.

Pharm.D. Requirements

Dual degree students must successfully complete 144 units of Pharm.D. and acceptable J.D. units to receive the Pharm.D. degree. The 144 units must include 132 units of required and elective pharmacy course work plus 12 units of J.D. course work deemed acceptable to meet Pharm.D. elective requirements. Dual degree students should graduate with their Pharm.D. degrees at the completion of the first semester of the sixth academic year of the dual degree program. Students will be eligible to sit for the Pharmacy Board Exams after completion of the Pharm.D. degree requirements. However, dual degree students will not actually be awarded their Pharm.D. degrees until they complete requirements for both degrees.

Juris Doctor Requirements

Dual degree students must successfully complete 88 units of J.D. and acceptable Pharm.D. course work during the second to sixth years of the dual degree program to receive the J.D. degree. The 88 units must be composed of 76 units of J.D. course work, including satisfaction of the upper-division writing requirement and any other substantive requirements, plus 12 units of Pharm.D. course work deemed acceptable to meet J.D. elective requirements. No J.D. credit will be awarded for Pharm.D. course work completed prior to matriculation in the law school. Students cannot receive the J.D. degree under requirements for the dual degree program without prior or simultaneous completion of the Pharm.D. degree.

Both professions require passing a state board or bar exam to practice the respective professions. Neither of these professional doctoral degrees requires a thesis or comprehensive final exam.

Pharm.D./MBA Dual Degree Program

Responding to the growing demand on pharmacists to be knowledgeable in both science and business administration, the USC School of Pharmacy in 1988 helped pioneer an innovation in pharmaceutical education by offering this unique five-year dual degree program.

The Pharm.D./MBA dual degree program is offered cooperatively by the School of Pharmacy and the USC Marshall School of Business. Students must complete concurrently all requirements established by both schools for their respective degrees.

The program involves completion of the first year in the School of Pharmacy, the second in the Marshall School of Business, and then completion of the balance of both degrees during the third through fifth years. A total of 48 units must be completed in the Marshall School of Business.

First Year: Required Pharmacy School courses.

Second Year: Required MBA courses and graduate business electives.

Third to Fifth Years: 108 units of Pharmacy courses and graduate business electives sufficient to bring the total units completed in the Marshall School of Business to at least 48. Dual degree students may not count courses taken outside the Marshall School of Business toward the 48 units.

The Pharm.D. and the MBA are awarded simultaneously upon completion of the School of Pharmacy and the Marshall School of Business requirements.

Admission Requirements

Applicants to this program must have a baccalaureate degree from an accredited college or university and should apply during their first year of pharmacy studies. Only students who have successfully completed one year in the School of Pharmacy will be considered for admission to the Marshall School of Business. See the Marshall School of Business, page xx, for admission requirements.

Pharm.D./M.S., Gerontology

The emerging impact of the elderly on the health care system has created a need for health care providers who understand the unique needs of the elderly. As drug therapy remains the primary therapeutic option for chronic disease, the demand for prescription drugs will continue to rise. There is a demand for pharmacists who are equipped to meet the pharmaceutical care needs of this population. Geriatric pharmacy is recognized as a specialty, with board certification through the Commission for Certification in Geriatric Pharmacy. The Pharm.D./M.S., Gerontology program will provide extensive education and training in the unique health care needs of older adults. It will allow student pharmacists with a career interest in geriatrics or gerontology to work with health care planning or delivery organizations to develop and implement progressive pharmaceutical care programs for the elderly.

Application and Admission Requirements

Students who intend to pursue the dual Pharm.D./MSG degree must be accepted by both programs. This includes having completed a baccalaureate degree from an accredited college or university with a minimum GPA of 3.0 and a minimum equivalent GRE score of 1000. Students will not be given special consideration for admission to either program because they are applying for the dual degree. Students may apply to the dual Pharm.D./M.S. degree program in two ways. First, they may apply at the time they submit their Pharm.D. application by concurrently submitting applications to both programs. Students who elect this approach must identify themselves on both applications as potential dual

degree students. Students who are admitted to both programs will be offered admission to the Pharm.D. and will be offered admission to the dual degree program. Second, students can apply to the dual degree by submitting an application to the M.S. program during their first year of enrollment in the Pharm.D. prior to the M.S. published application deadline. Students who elect this approach must apply through the School of Pharmacy. Students admitted to the M.S. program using this approach will be offered admission to the dual degree contingent on passing all courses in their first year of the Pharm.D. with a minimum 3.0 GPA. Students accepted to the dual degree program must maintain a minimum 3.0 GPA in their Gerontology and Pharm.D. courses.

Recommended Program

First year: Required Year I Pharm.D. course work

Second year: Required Gerontology course work

Third year: Required Year II Pharm.D. course work

Fourth year: Required Year III Pharm.D. course work

Fifth year: Required Year IV Pharm.D. course work

Graduation Requirements

Students must complete all requirements for the Pharm.D. (see page xx) and M.S., Gerontology degrees as listed in the current catalogue with a minimum cumulative 3.0 GPA. The specific M.S. course requirements for the dual Pharm.D./M.S. degree are listed on page xx.

Pharm.D./Master of Science, Global Medicine

The dual degree in Pharmacy and Global Medicine is designed for students who are interested in providing pharmaceutical care to underserved populations around the world. Students enrolled in this dual degree program will benefit from an advanced understanding of the role of, and issues surrounding, modern medicine in developing countries.

Requirements

Students must gain admission to and fulfill the degree requirements for both programs, which include 138 units for the Doctor of Pharmacy and 24 units for the M.S. in Global Medicine. Six units of GM elective units can be used towards the Pharm.D. elective requirement, and PHRD 503 and PHRD 504 substitute for MEDS 503 and MEDS 504.

Program Adaptation

Because MEDS 503 and MEDS 504, core requirements for the M.S. in Global Medicine program, cover the same material as PHRD 503 and PHRD 504, the Pharm.D./Global Medicine dual degree program substitutes PHRD 503 and PHRD 504 for MEDS 503 and MEDS 504 as core requirements for the dual degree.

Pharm.D./Master of Public Health

The School of Pharmacy and the Master of Public Health program, in recognition of the rapidly changing health care environment, and in response to the growing demand for pharmacists who are knowledgeable in

both pharmacy and population-based health care issues, have developed a dual degree program. The joint Pharm.D./MPH degree will enable graduates to be more responsive to today's health care needs and will provide training for pharmacists who seek to be agents of change within the profession and to assume leadership roles in the pharmacy field and in public health at the local, state and national levels.

Students who are enrolled in the School of Pharmacy must apply to the Master of Public Health program no later than January of their first year. All requirements for admission to the regular MPH program must also be fulfilled by dual degree applicants.

The Pharm.D./MPH program spans five years (four years of pharmacy school courses and one year of public health courses). Students begin the core MPH courses following the successful completion of the first year of pharmacy school. The last three years of the program are devoted to course work and the clinical rotations of the School of Pharmacy and to the completion of the elective courses and practicum (field experience) of the MPH program.

All students in the Pharm.D./MPH program must meet course requirements, grade point average requirements and program residency requirements of both programs. Students must have a cumulative GPA of 3.0 in the Pharm.D. curriculum and a 3.0 in the MPH curriculum to meet graduation requirements.

The Pharm.D. and the MPH degrees are awarded simultaneously upon completion of the School of Pharmacy and the Master of Public Health requirements.

Admission Requirements and Procedures

Students applying for the dual degree program must meet the respective admission requirements for each program. This includes having completed a baccalaureate degree from an accredited college or university with a minimum GPA of 3.0 and having acceptable GRE and TOEFL or IELTS scores as applicable. Students will not be given special consideration for admission to either program because they are applying for the dual degree. Students may apply to the dual Pharm.D./MPH degree program in two ways. First, they may apply at the time they submit their Pharm.D. application by concurrently submitting applications to both programs. Students who elect this approach must identify themselves on both applications as potential dual degree students. Students who are admitted to both programs will be offered admission to the Pharm.D. and will be offered admission to the dual degree program contingent on passing all courses in their first year of the Pharm.D. with a minimum 3.0 GPA. Students who are accepted by only one program may choose to attend that program, but will not be eligible for the dual degree. Second, students can apply to the dual degree by submitting an application to the MPH program during their first year of enrollment in the Pharm.D. prior to the MPH published application deadline. Students who elect this approach must apply through the School of Pharmacy. Students admitted to the MPH program using this approach will be offered admission to the dual degree contingent on passing all courses in their first year of the Pharm.D. with a minimum 3.0 GPA.

Pharm.D./M.S., Regulatory Science

Regulatory science is that branch of knowledge which relates the regulatory and legal requirements of biomedical product development to the scientific testing and oversight needed to ensure product safety and efficacy. The program provides an opportunity for advanced preparation in the fields of regulatory affairs, quality assurance and clinical research. Students must complete concurrently all of the requirements established for the respective degrees. The program alternates the courses required for the Pharm.D. program during the fall and spring terms with courses required in summer terms for the M.S. program. Students will typically take courses in the summers of years two-four. Up to 12 appropriate units of course work from the Pharm.D. program can be applied toward the M.S. degree. The Pharm.D. and the M.S., Regulatory Science degrees will be awarded simultaneously upon completion of requirements for the two programs.

Admission Requirements and Procedures

Students applying for the dual degree program must meet the respective admission requirements for each program and must have a baccalaureate degree. Students will not be given special consideration for admission to either program because they are applying for the dual degree. Students may apply to the dual Pharm.D./M.S., Regulatory Science degree program in two ways. First, they may apply at the time they submit their Pharm.D. application by concurrently submitting applications to both programs. Students who elect this approach must identify themselves on both applications as potential dual degree students. Students who are admitted to both programs will be offered admission to the Pharm.D. and will be offered admission to the dual degree program contingent on passing all courses in their first year of the Pharm.D. with a minimum 3.0 GPA. Students who are accepted by only one program may choose to attend that program but will not be eligible for the dual degree. Second, students can apply to the dual degree by submitting an application to the M.S. in Regulatory Science program during their first or second year of enrollment in the Pharm.D. prior to the M.S. in Regulatory Science published application deadline. Students who elect this approach must apply through the School of Pharmacy. Students admitted to the M.S. in Regulatory Science using this approach will be offered admission to the dual degree contingent on passing all courses in their Pharm.D. studies with a minimum 3.0 GPA.

Pharm.D./Doctor of Philosophy

The Doctor of Pharmacy/Doctor of Philosophy (Pharm.D./Ph.D.) program is designed to permit qualified Pharm.D. students with a bachelor of science or equivalent degree to pursue research training in the pharmaceutical sciences and toxicology. A student accepted into the joint program must meet all requirements for the Pharm.D., as well as the requirements for the Ph.D. in the pharmaceutical sciences or toxicology sections listed in this catalogue. A maximum of 20 units from the Pharm.D. program may be credited toward the Ph.D. Up to 12 units of these Pharm.D. courses may, at the discretion of the student's Ph.D. adviser, be counted toward the required 24 units of core course work.

Admission Procedure

Students applying for the dual degree program must meet the respective admission requirements for each program. This includes having completed a baccalaureate degree from an accredited college or university with a minimum GPA of 3.0 and a minimum GRE score of 1000. Students will not be given special consideration for admission to either program because they are applying for the dual degree. Students may apply to the dual Pharm.D./Ph.D. degree program in two ways. First, they may apply at the time they submit their Pharm.D. application by concurrently submitting applications to both programs. Students who elect this approach must identify themselves on both applications as potential dual degree students. Students who are admitted to both programs will be offered admission to the Pharm.D. and will be offered admission to the dual degree program contingent on passing all courses in their first year of the Pharm.D. with a minimum 3.0 GPA. Students who are accepted by only one program may choose to attend that program but will not be eligible for the dual degree.

Second, students can apply to the dual degree by submitting an application to one of the Ph.D. programs in the School of Pharmacy during their first two years of enrollment in the Pharm.D. prior to the respective published application deadlines for the Ph.D. programs. Students who elect this approach must apply through the Pharm.D. program. Students admitted to the Ph.D. program using this approach will be offered admission to the dual degree contingent on their having maintained a minimum 3.0 GPA in the Pharm.D. program.

Pharm.D./Graduate Certificate in Gerontology

This integrated program in pharmacy and gerontology prepares students with an interest in geriatric pharmacy to assume leadership roles at academic, administrative or policy levels within the profession. The program involves the completion of 16 units of core area courses in physiology, psychology, sociology and social policy aspects of aging offered by the USC Davis School of Gerontology. In addition, students are required to complete 8 units of approved elective courses in gerontology or

geriatric pharmacy to be credited toward the requirements for the Pharm.D. and the Graduate Certificate in Gerontology. It is expected that the program can be successfully completed by candidates taking electives in geriatric pharmacy or gerontology during the regular semester and completing one core course in gerontology during each summer in the four year Pharm.D. program.

See the Davis School of Gerontology, page xx, for complete requirements.

Admission Requirements

Students who have a baccalaureate degree from an accredited college or university must submit separate applications to the School of Pharmacy and the Davis School of Gerontology. All requirements for admission to the regular Pharm.D. program must be fulfilled by the candidate. GRE scores are not required for admission to the certificate program.

Certificate Programs

Regulatory Science Program

USC School of Pharmacy

1540 Alcazar St., CHP G32

Los Angeles, CA 90089

(323) 442-3102

Email: regsci@usc.edu

regulatory.usc.edu

Certificate in Clinical Research Design and Management

The graduate certificate in clinical research design and management is designed to strengthen the statistical, research and project management skills of clinical researchers and their associated clinical team members. Students must complete at least 12 units of course work including at least two courses in clinical design and trial management, one course in ethics and one course in a specialized aspect of design, management or statistics, subject to the approval of the program director. The program will include course work delivered in non-traditional formats such as intensive weekend sessions and will use distance learning tools, Webcast lectures and study materials. Courses can be taken on site, by distance or as a blended combination. Students should confirm their specific course work plan in consultation with the graduate advisers before beginning the program. Students who have bachelor's degrees from accredited colleges or universities must submit an application for graduate study through the regulatory science program of the School of Pharmacy. GRE scores are not required for admission to the certificate program. Students are expected to enroll each semester until the program is completed.

REQUIREMENTS		UNITS
<i>Introduction to Clinical Trials</i>		
MPTX 517	Structure and Management of Clinical Trials	4

Clinical Design/Statistics (choose one)

PM 510L	Principles of Biostatistics	4
MPTX 522	Introduction to Clinical Trial Design and Statistics	3

Biomedical Ethics

MPTX 602	Science, Research and Ethics	2
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Additional options in specialized aspect of design or management (choose one):

MPTX 511	Introduction to Medical Product Regulation	3
MPTX 520	Risk Management for Health Care Products	3
PM 510L	Principles of Biostatistics	4
PM 511a	Data Analysis	4
PM 512	Principles of Epidemiology	4
PM 523	Design of Clinical Studies	3
RSCI 527	Medical Product Safety	3
RSCI 528	Safety in the Health Care Environment	3

Certificate in Food Safety

The graduate certificate in food safety is a 12-unit program of course work designed to strengthen the knowledge base and functional "toolkit" of individuals who deal with the production and management of food in industry and government. Students are required to take an entry level course that focuses on regulatory requirements for foods and dietary supplements and two additional courses that focus on food science and food/drug toxicology respectively. Final course work will be selected from a small grouping of electives that deal with quality systems or risk management. The program will include course work delivered in nontraditional formats, such as intensive weekend sessions, and will use distance learning tools, Webcast lectures and study materials. Courses can be taken on site, by distance or as a blended combination. Students should confirm their specific course work plan in consultation with the graduate advisers before beginning the program.

Students who have bachelor's degrees from accredited colleges or universities must submit an application for graduate study through the regulatory science program of the School of Pharmacy. GRE scores are not required for admission to the certificate program. Students are expected to enroll each semester until the program is completed.

REQUIREMENTS		UNITS
MPTX 514	Regulation of Food and Dietary Supplements	3
MPTX 524	Introduction to Food Science and Technology	3
RSCI 525	Introduction to Drug and Food Toxicology	3
<i>Quality/Risk Management Option:</i>		
MPTX 515	Quality Systems and Standards	3
MPTX 526	Chemistry Manufacturing and Controls	3
RSCI 520	Introduction to Risk Management for Health Care Products	2
RSCI 529	Application of Risk Management Tools and Techniques	2

Certificate in Patient and Product Safety

The graduate certificate in patient and product safety is a 12-unit program that educates students in the emerging field of safety and risk management in the health care environment. It is designed to produce graduates who have a particular expertise in the evaluation and mitigation of medical errors and health-care product problems. Course work is typically delivered in non-traditional formats such as intensive weekend sessions and will use distance learning tools, Webcast lectures and study materials. Courses can be taken on site, by distance or as a blended combination. Students should confirm their specific course work plan in consultation

with the graduate advisers before beginning the program. Students who have bachelor's degrees from accredited colleges or universities must submit an application for graduate study through the regulatory science program of the School of Pharmacy. GRE scores are not required for admission to the certificate program. Students are expected to enroll each semester until the program is completed.

Students must complete 12 units of specified course work, that normally will include an introductory course in the basic principles of risk management, a second course in the use of risk management tools, and two additional courses in patient and product safety respectively as listed below. In addition, a course in medical ethics is recommended. Most students will take the courses that are listed in the sample student program below, but if students have already strong previous experience in risk management or safety, other statistical or quality courses taught in graduate programs at USC may be substituted with the permission of the program director. The certificate can be completed on a part-time basis but must be finished within five years.

REQUIREMENTS		UNITS
MPTX 602	Science, Research and Ethics	2
RSCI 520	Introduction to Risk Management for Health Care Products	2
RSCI 527	Medical Product Safety	3
RSCI 528	Safety in the Health Care Environment	3
RSCI 529	Application of Risk Management Tools and Techniques	2

Certificate in Preclinical Drug Development

The graduate certificate in preclinical drug development provides advanced foundational training in preclinical aspects of drug development, translational research and regulatory control. Students must complete at least 12 units of course work including at least three courses

in preclinical design and development (typically, RSCI 530 Translational Medicine: An Overview; RSCI 531 Drug Discovery; RSCI 532 Early Stage Drug Development) and one course in a related aspect of research design, regulation or ethics, subject to the approval of the program director. The program will include course work delivered in nontraditional formats such as intensive weekend sessions and will use distance capabilities, Webcast lectures and study materials. Courses can be taken on site, by distance or as a blended combination. Students should confirm their specific course work plan in consultation with graduate advisers before beginning the program. Students who have baccalaureate degrees from accredited colleges or universities must submit an application for graduate study through the regulatory science program of the School of Pharmacy. GRE scores are not required for admission to the certificate program. Students are expected to enroll each semester until the program is completed.

Certificate in Regulatory and Clinical Affairs

The graduate certificate in regulatory and clinical affairs is designed to provide specialized education for individuals interested in developing a systematic understanding of the U.S. regulatory system for medical products. Students must complete at least 12 units of course work including an introductory course in regulatory affairs:

REQUIREMENTS		UNITS
<i>One introductory course in regulatory affairs</i>		
MPTX 511	Introduction to Medical Product Regulation	3
RSCI 530	Translational Medicine: An Overview	2
RSCI 532	Early Stage Drug Development	3

At least one specialized course in regulatory

<i>management of a particular product type</i>		
MPTX 512	Regulation of Pharmaceutical and Biological Products	3

MPTX 513	Regulation of Medical Devices and Diagnostics	3
MPTX 514	Regulation of Food and Dietary Supplements	3

At least one course in clinical design

MPTX 517	Structure and Management of Clinical Trials, or	
MPTX 522	Introduction to Clinical Trial Design and Statistics	4

One course in quality systems or risk management

MPTX 515	Quality Systems and Standards	3
MPTX 526	Chemistry Manufacturing and Controls	3
MPTX 520	Risk Management for Health Care Products	3
RSCI 525	Introduction to Drug and Food Toxicology	3

Other courses may be substituted with the approval of the program director. The program will include course work delivered in nontraditional formats such as intensive weekend sessions and will use distance capabilities to capture and Webcast lectures and study materials. Courses can be taken on site, by distance or as a blended combination. Students should confirm their specific course work plan in consultation with the graduate advisers before beginning the program. Students who have a baccalaureate degree from an accredited college or university must submit an application for graduate study through the regulatory science program of the School of Pharmacy. This program is particularly directed at Ph.D. students who wish to take the certificate during their USC studies. GRE scores are not required for admission to the certificate program. Students are expected to enroll each semester until the program is completed.

Non-Degree Programs

Office of Continuing Professional Development

1985 Zonal Avenue

Los Angeles, CA 90089-9121

(323) 442-2403

FAX: (323) 442-3600

Email: pharmce@usc.edu

usc.edu/schools/pharmacy/continuing_education

Continuing Education

The School of Pharmacy, Office of Continuing Professional Development, is a recognized provider of

continuing pharmacy education and certificate programs accredited by the Accreditation Council for Pharmacy Education (ACPE) and recognized by the California State Board of Pharmacy and throughout the United States.

The school serves as a primary educational resource for pharmacists in California and as a supplementary resource for other health professionals and pharmacists, nationally and internationally.

Programs are designed to educate pharmacists about current issues in pharmaceutical care, practice

management, therapeutics and other topics of professional interest. Continuing education programs are held at the School of Pharmacy, other campus locations, and annually in Las Vegas and Hawaii.

For information concerning continuing education programs contact: Office of Continuing Professional Development.

Pharmacy Courses

Courses of Instruction

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

CLINICAL AND EXPERIMENTAL THERAPEUTICS (CXPT)

CXPT 609 Preclinical Experimental Therapeutic Development (4, FaSpSm) Evolution of a chemical entity as it is transformed into a drug candidate. Open only to students in clinical and experimental therapeutics and management of drug development.

CXPT 664 Clinical Problem Solving (3, Sp) (Enroll in PHRD 664)

HEALTH CARE DECISION ANALYSIS (HCDA)

HCDA 501 Fundamentals of Health Care Insurance Design (3, Fa) Introduction to insurance payer types, functions, actuarial pricing methods, network design and business operations impacting the provision of health benefits and reimbursement for medical products and services. *Recommended preparation:* undergraduate degree in pharmacy, medicine, other health care, economics and administrative sciences or related disciplines; enrollment in a related M.S. or Ph.D. program.

HCDA 502 Comparative International Health Care Systems (3) Health coverage and funding across seven industrial countries, with examination of variances and similarities in stated policy and outcomes by region and population mix. *Recommended preparation:* HCDA 501 and undergraduate degree in pharmacy, medicine, other health care, economics and administrative sciences or related disciplines; enrollment in a related M.S. or Ph.D. program.

HCDA 503 Competitive Health Care Intelligence and Pricing (3) Analysis and techniques to evaluate marketplace opportunities and value and pricing determinations for medical products; considers product launch and positioning strategies, intelligence gathering, and decision-making. *Recommended preparation:* HCDA 501 and undergraduate degree in pharmacy, medicine, other health care, economics and administrative sciences or related disciplines; enrollment in a related M.S. or Ph.D. program.

HCDA 510 Business Implications of Health Care Reform (3) Coverage, access and reimbursement changes from health care reform; individual and mandated benefits, medical loss ratio, health care exchanges and impact of comparative effectiveness review.

HCDA 553 Advanced Pricing Strategies (3) Positioning products in global markets; market share targets, payer value, life cycle and launch techniques, tools for formulary positioning and reimbursement.

HCDA 560 Managing Effective Partnerships and Mergers (3) M&A and partnering in the health care industry; law, due diligence, contracts, research alliances, structured agreements, global partners, and tactical business strategies.

MOLECULAR PHARMACOLOGY AND TOXICOLOGY (MPTX)

MPTX 500 Molecular Pharmacology and Toxicology I (4, Fa) This is the first part of a two-semester introductory and survey course for the molecular pharmacology and toxicology degree program. *Prerequisite:* knowledge of biochemistry.

MPTX 501 Molecular Pharmacology and Toxicology II (4, Sp) The second part of the two-semester course covers the general aspects of molecular pharmacology and toxicology on the basis of biochemical, molecular, biological and environmental approaches. *Prerequisite:* MPTX 500.

MPTX 502 Pharmacology (4, Fa) Fundamentals of pharmacology in the context of the rapidly developing knowledge of related disciplines.

MPTX 511 Introduction to Medical Product Regulation (3, Sm) Introduction to regulatory environments surrounding medical product development, manufacturing and marketing; operation of federal, state and international regulatory bodies. *Recommended preparation:* undergraduate degree in pharmacy, medicine or independent health sciences, engineering or equivalent mix of post-secondary training and industry experience.

MPTX 512 Regulation of Pharmaceutical and Biological Products (3, Sm) Ensuring safety and effectiveness of new drugs and biologics; marketing and monitoring approved pharmaceutical/biological products; management of genetically engineered products. *Recommended preparation:* undergraduate degree in pharmacy, medicine or independent health sciences, engineering or equivalent mix of post-secondary training and industry experience.

MPTX 513 Regulation of Medical Devices and Diagnostics (3, Sm) Development and testing of new medical products according to U.S. and international regulatory requirements. *Recommended preparation:* undergraduate degree in pharmacy, medicine or independent health sciences, engineering or equivalent mix of post-secondary training and industry experience.

MPTX 514 Regulation of Food and Dietary Supplements (3, Sm) Regulation and testing of foods, food additives and dietary supplements in the U.S. and abroad. *Recommended preparation:* undergraduate degree in pharmacy, medicine or independent health sciences, engineering or equivalent mix of post-secondary training and industry experience.

MPTX 515 Quality Systems and Standards (3, Sm) Principles of quality assurance and quality control for medical-product development and manufacture. *Recommended preparation:* undergraduate degree in pharmacy, medicine or independent health sciences, engineering or equivalent mix of post-secondary training and industry experience.

MPTX 516 Medical Products and the Law (3, Fa) Legal issues affecting intellectual property, medical product development, marketing and safety, taught through case studies and lectures. *Recommended preparation:* undergraduate degree in pharmacy, medicine or independent health sciences, engineering or equivalent mix of post-secondary training and industry experience.

MPTX 517 Structure and Management of Clinical Trials (4, FaSpSm) Development and execution of clinical trials: bioethical principles, good clinical practices, project management and documentation.

MPTX 518 Writing Regulatory Drug Submissions (3, Sp) Developing form and content for investigational drug applications, new drug applications, biologic licensing applications to FDA; common technical documents; considerations of writing style.

MPTX 519 Global Regulation of Medical Products (3, Fa) Regulatory requirements governing medical products in European Union, Asia and other global markets.

MPTX 520 Risk Management for Health Care Products (3, Sp) Risk assessment and management techniques, including FMEA, HACCP, HAZAP, human factors analysis; policies, regulations, requirements and standards; loss control and liability prevention.

MPTX 522 Introduction to Clinical Trial Design and Statistics (3) Clinical designs and statistics commonly used to test medical products in general populations and special patient groups.

MPTX 524 Introduction to Food Science and Technology (3, Sm) Discusses the basic and applied concepts of food science and food safety, and demonstrates the principles of food chemistry, sensory evaluation, and product development. *Recommended preparation:* undergraduate degree in biological sciences or related disciplines.

MPTX 526 Chemistry Manufacturing and Controls (3, Fa) Provides a firm foundation in the domestic and international CMC process, from concept to commercialization of new active pharmaceutical ingredients and products. *Recommended preparation:* undergraduate degree in pharmacy, medicine or independent health science, engineering or equivalent.

MPTX 531 Cell Biology (4) (Enroll in INTD 531)

MPTX 561 Molecular Genetics (4, Sp) (Enroll in INTD 561)

MPTX 571 Biochemistry (4, Sp) (Enroll in INTD 571)

MPTX 572 Systems Physiology and Disease I (4, Fa)
(Enroll in INTD 572)

MPTX 573 Systems Physiology and Disease II (4, Sp)
(Enroll in INTD 573)

MPTX 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MPTX 594abz Master's Thesis (2-2-0, FaSpSm) Credit on acceptance of thesis. Graded IP/CR/NC.

MPTX 599 Special Topics (2-4, max 8) Special topics in Molecular Pharmacology and Toxicology.

MPTX 602 Science, Research and Ethics (2, Fa) A discussion of the unique technological and philosophical issues that challenge modern scientists and a discernment of ethical responses to those challenges.

MPTX 603 Molecular Mechanisms for Biological Signals (4, Fa) Biological mechanisms of hormone, neuro-transmitter, growth factor and xenobiotic actions from ligand-receptor interactions, signal transductions, modification processes to regulation of gene expression and cellular growth. *Prerequisite:* knowledge of physiology and biochemistry.

MPTX 630 Directed Field-Research Project (6, FaSpSm) Research/policy analysis conducted under preceptor supervision in an industrial or governmental setting. Open to students who have completed the majority of course credits in the Regulatory Science program. Graded CR/NC.

MPTX 700 Seminar in Molecular Pharmacology and Toxicology (1, max 8, FaSp) Contemporary advances in molecular pharmacology and toxicology research. Registration required during each year of residency.

MPTX 790 Research (1-12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

MPTX 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC.

PHARMACY (PHRD)

PHRD 501 Pharmaceutics I (4, Fa) Introduction to physiochemical principles of dosage forms; properties of molecules in dosage forms, stability of pharmaceuticals and their interactions in body tissue, including computational approaches. Open to Doctor of Pharmacy students only.

PHRD 502 Pharmaceutics II (3, Sp) Principles involved in molecules movement across biological barriers. Properties, characteristics, application of homogeneous and heterogeneous dosage forms, liquid, semi-solid and solid. Open to Doctor of Pharmacy students only.

PHRD 503 Biological Systems I (4, Fa) Integrated teaching of anatomy, histology, physiology and pathophysiology using an organ-based approach. Open to Doctor of Pharmacy students only.

PHRD 504 Biological Systems II (6, Sp) Continued integrated teaching of anatomy, histology, physiology and pathophysiology, using an organ-based approach. Open to Doctor of Pharmacy students only.

PHRD 505 Molecular Genetics and Therapy (3, Fa) Principles of gene expression, and recombinant DNA methods and applications. Focus on human genetics and influence of genetic background on the utilization and effectiveness of drugs. Open to Doctor of Pharmacy students only.

PHRD 506 Self Care and Non-Prescription Therapies (5, Fa) Facilitate patient selection of self-care health care products: OTC drugs, dosages, pharmacology, efficacy, cost, side effects, adverse reactions, contraindications, and interactions with other medications. Open to Doctor of Pharmacy students only.

PHRD 507 Health Care Delivery Systems (2, Fa) Introduction to understanding the structure of the health care system. Includes health care financing and the role of pharmacy and the pharmacist in health systems.

PHRD 508 Pharmacy Literature Analysis and Drug Information (3, FaSp) Literature evaluation and biostatistics of clinical and health services research, and drug information services. Emphasis on drug therapy, patient outcomes, and formulary development. Open to Doctor of Pharmacy students only.

PHRD 509 Pharmacy Practice and Experience I (4, Fa) Introduction of principles and the application of pharmaceutical care in community or hospital pharmacy setting. Includes communications, basic practice skills, career pathways and leadership. Open to Doctor of Pharmacy students only.

PHRD 510 Pharmacy Practice and Experience II (4, Sp) Introduction of principles and the application of pharmaceutical care in community or hospital pharmacy setting. Includes calculations, drug information, and basic practice skills. Open to Doctor of Pharmacy students only.

PHRD 551 Immunology (3, Fa) Basic principles of immunology and their application to the understanding and treatment of immunologically-mediated diseases. Provides the scientific basis of immunotherapy and immunodiagnosis. Open to Doctor of Pharmacy students only.

PHRD 552 Pharmaceutics III (3, Sp) Principles and applications of controlled, targeted, and self-regulating drug delivery. Methods to deliver therapeutic peptides, proteins and genetic materials. Open to Doctor of Pharmacy students only.

PHRD 553 Management within Health Care Organizations (2, Fa) Management of the professional practice of pharmacy in organized health care systems. Introduction to formulary development and outcome analysis. Open to Doctor of Pharmacy students only.

PHRD 554 Public Health and Epidemiology (2, Sp) Introduction to epidemiology, environmental health, health education, health care organizations and financing. Orientation to social and governmental controls on the health care system. Open to Doctor of Pharmacy students only.

PHRD 555 Biochemical and Molecular Sites of Drug Action (4, Fa) Basic principles of drug action and receptor actions. Includes their application to the understanding and treatment of disease. Provides the scientific basis of pharmaceutical action.

PHRD 557 Therapeutics I: Introductory Principles (4, Fa) Integrated teaching of the principles of pharmacology, biomedical chemistry, pharmacogenomics and clinical therapeutics. Open to Doctor of Pharmacy students only.

PHRD 559 Therapeutics II: Pharmacokinetics (3, Fa) Integrated teaching of basic and clinical pharmacokinetic/pharmacodynamic concepts. Open to Doctor of Pharmacy students only.

PHRD 560 Therapeutics III (6, Sp) Integrated teaching of biomedical chemistry, pharmacology, clinical pharmacokinetics, and therapeutics of drugs, with emphasis on pharmaceuticals treating diseases associated with the central nervous system. Open to Doctor of Pharmacy students only.

PHRD 561 Parenteral Therapy Externship (3, FaSpSm) Drug weight/volume concentrations, dilutions and additive volumes are calculated in compounding of parenteral products in various patient-care settings using aseptic technique. Open to Doctor of Pharmacy students only.

PHRD 562 Therapeutics IV (4, Sp) Integrated teaching of biomedical chemistry, pharmacology, clinical pharmacokinetics, and therapeutics of drugs with an emphasis on treating diseases of the renal, GI and pulmonary systems. Open to Doctor of Pharmacy students only.

PHRD 601 Therapeutics V (6, Fa) Integrated teaching of biomedical chemistry, pharmacology, clinical pharmacokinetics, and therapeutics of drugs, with emphasis on pharmaceuticals affecting cardiovascular and circulatory diseases. CPR certification. Open to Doctor of Pharmacy students only.

PHRD 603 Therapeutics VI (3, Fa) Integrated teaching of biomedical chemistry, pharmacology, clinical pharmacokinetics and therapeutics of drugs with an emphasis on pharmaceuticals affecting the endocrine diseases, systems and women's health. Open to Doctor of Pharmacy students only.

PHRD 605 Therapeutics VII (4, Fa) Integrated teaching of the biomedical chemistry, pharmacology, clinical pharmacokinetics, and therapeutics of drugs; with emphasis on chemotherapy of infectious disease: bacterial, microbial, viral, parasitic, and fungal.

PHRD 606 Therapeutics VIII (2, Sp) Advanced topics and clinical therapeutics of drugs, with emphasis on the treatment of infectious disease: bacterial, microbial, viral, parasitic and fungal.

PHRD 607 Nutrition (2, Fa) Biomedical knowledge is correlated with assessments of clinical case-management problems to understand the interrelationship between nutrition and health in both hospitalized and healthy patients. Open to Doctor of Pharmacy students only.

PHRD 608 Therapeutics IX (2, Sp) Integrated teaching of biomedical chemistry, pharmacology, clinical pharmacokinetics and therapeutics of drugs, with emphasis on pharmaceuticals for managing oncological diseases. Open to Doctor of Pharmacy students only.

PHRD 610 Therapeutics X (3, Sp) Focuses on the pharmacology, pharmacokinetics, medicinal chemistry and clinical therapeutics that apply to pharmaceutical care of pediatric, geriatric and chronic pain patients.

PHRD 612 Therapeutics XI (2, Sp) Updates students on recent advances in clinical areas, prepares students for advanced practice experiences and assessment of clinical readiness via a final examination. Graded CR/NC.

PHRD 614 Pharmaceutical Economics and Outcome Studies (3, Sp) Economic analysis of the U.S. health care system, the pharmaceutical industry, and the profession; economic assessment of drug therapy costs and health care outcomes applying pharmacoeconomic research methodologies. Open to Doctor of Pharmacy students only.

PHRD 616 Pharmacy, Law and Ethics (3, Sp) To provide students with an understanding of ethical issues that arise in pharmacy practice along with state and federal statutes, regulations, and pharmacy-related cases. Open to Doctor of Pharmacy students only.

PHRD 651 Community Pharmacy I (3, Fa) Development of specialized knowledge and skills in community pharmacy practice involving location analysis, pharmacy management principles, and introduction to business law concepts. Open to Doctor of Pharmacy students only.

PHRD 652 Community Pharmacy II (3, Sp) A continuation of pharmacy business law concepts encompassing contract principles and forms of ownership, including a review of pharmacy laws, compounding principles, and OTC agents. Open to Doctor of Pharmacy students only. *Prerequisite:* PHRD 651.

PHRD 653 Health Systems Pharmacy I (3, Fa) Understanding formal and informal organizations in institutions, managed care, disease management, health care policy and financing, patients' chart organization, and clinical monitoring parameters. Open to Doctor of Pharmacy students only.

PHRD 654 Health Systems Pharmacy II (3, Sp) Recognizing resources available for drug information, familiarity with institutional formularies, medication counseling, writing chart notes, and clinical activities at an off-campus health care institution. Open to Doctor of Pharmacy students only. *Prerequisite:* PHRD 557.

PHRD 655 Geriatric Pharmacy I (3, Fa) Specialized knowledge and skills in geriatric pharmacy, pharmacology of aging, and unique functions of health care team providing care to the elderly patient. Open to Doctor of Pharmacy students only.

PHRD 656 Geriatric Pharmacy II (3, Sp) Specialized knowledge and skills in gerontology and geriatric pharmacy including the pathophysiology of selected cardiovascular, endocrine, genitourinary gastrointestinal disorders, osteoarthritis, and osteoporosis. Open to Doctor of Pharmacy students only. *Prerequisite:* PHRD 559.

PHRD 657L Basic Research Design (3, max 6, FaSp) Research experience to integrate research into Doctor of Pharmacy program. Research focuses on industrial, academic, or governmental issues. Open to Doctor of Pharmacy students only.

PHRD 658 Sleep and the Pharmacologic Management of Its Disorders (3, FaSp) Overview of normal sleep manifestations, and treatment of common sleep disorders, and the pharmacist's role in assessment, treatment, and referral. Open to Level III Doctor of Pharmacy students only.

PHRD 659 Molecular Therapeutics: Signal Transduction (3, FaSp) Principles of molecular therapeutics against signaling pathways; emphasis on biological mechanisms underlying hormone, growth factor, and neurotransmitter-mediated gene regulation, proliferation, and cell death. Open to Level III Pharm.D. students only.

PHRD 660 Disease State Management I (3, FaSp) The processes required to develop disease state management protocols based on data drawn from the medical research literature. Open to Level III Doctor of Pharmacy students only.

PHRD 661 Pharmacy Practice in Women's Health (3, FaSp) The pharmaceutical care of women patients is emphasized. Therapeutic, psychosocial factors and current research in women's health. Open to Level III Pharm.D. students only.

PHRD 662 Psychiatric Pharmacy Practice (3, Sp) Specialized knowledge and skills in psychiatric pharmacy practice including child, adult, and geriatric psychopharmacology applied to inpatient and outpatient treatment. Open to Level III Pharm.D. students only.

PHRD 663 Pharmaceutical Development (3, FaSp) Examination of pharmaceutical product development process including discovery, preclinical/clinical studies, regulatory-legal issues, and marketing. Open to Doctor of Pharmacy students only.

PHRD 664 Clinical Problem Solving (3, Sp) Integration of physical assessment, laboratory tests, history-taking, and diagnosis to formulate decisions for optimal treatment plans in specific disease states. Open to graduate pharmacy students only.

PHRD 665 Complementary/Alternative Therapeutics (3, FaSp) Examines the therapeutic use of complementary/alternative medicines, such as herbal medicines, homeopathic drugs, vitamins and other nutritional supplements. Open to Level III Pharm.D. students only.

PHRD 666 Therapeutic Drug Monitoring (3, FaSp) Application of pharmacokinetic and pharmacodynamic principles to individualize patient drug regimens. Open to Level III Pharm.D. students only.

PHRD 667 Drugs of Abuse (3, FaSp) Specialized knowledge and skills in specific substance abuse-related areas. Each area will include addiction, wellness, and prevention components. Open to Doctor of Pharmacy students only.

PHRD 668 Computing Application (3, FaSp) Specialized knowledge and skills using computers in professional practice: telecommunication protocols, typical patient databases in hospital and community pharmacies, drug interactions, insurance billing, inventory control. Open to Doctor of Pharmacy students only.

PHRD 669 Health Care Needs of Special Populations (3, FaSp) Health care needs of the poor will be examined through participation in a multidisciplinary community clinic setting focusing on medication counseling and compliance. Open to Level III Pharm.D. students only.

PHRD 670 Marketing and Development in the Pharmaceutical Industry (3, FaSp) Basic and advanced strategies for marketing and development of new compounds or indication in the pharmaceutical industry. *Recommended preparation:* PHRD 663.

PHRD 671 Pharmacy Education Seminar (3, FaSp)

A seminar course with a focus on educational methods and teaching skills providing career development for students interested in academia. Open to Doctor of Pharmacy students only.

PHRD 675 Travel Medicine (3, FaSp)

An elective course for emphasizing the role of the pharmacist in preventing and treating travel related medical conditions. Open only to pharmacy majors.

PHRD 677 Risk Assessment and Management in Pharmacy Practice (3, FaSp)

Specific risk management issues, legal and professional expectations of pharmacists, and assessing and avoiding risk. Open only to Doctor of Pharmacy students.

PHRD 701 Acute Care Clinical APPE (6, FaSpSm)

Application of pharmaceutical care principles to the adult patient population in an acute care environment. Pharmacology, pharmacokinetics, and disease state management will be emphasized. Open to Doctor of Pharmacy students only. Graded CR/NC.

PHRD 702 Inpatient Psychiatric Pharmacy APPE (6, FaSpSm)

Application of pharmaceutical care principles to the inpatient psychiatric patient. Understanding of the treatment of common psychiatric disorders, patient interviewing skills and health care teams. Open to Level IV Doctor of Pharmacy students only.

PHRD 703 Long Term Care APPE (6, FaSpSm)

Application of pharmaceutical care to patients in long term care environments. Understanding of the therapeutic, legal and special needs of this patient population. Open to Level IV Doctor of Pharmacy students only.

PHRD 704 Primary Care APPE (6)

Disease state management and a primary care setting. Modification and design of drug therapy regimens and primary patient care using a team based approach. Open to Doctor of Pharmacy students only. Graded CR/NC.

PHRD 705 Community Pharmacy APPE (6, FaSpSm)

Pharmaceutical care principles applied to the community pharmacy environment. Participating in the development, implementation and outcome evaluation of patient care services in the community. Open to Level IV Doctor of Pharmacy students only. Graded CR/NC.

PHRD 706 Geriatrics APPE (6, FaSpSm)

Drug therapy and management of geriatric patients with a focus on unique medical, economic, and psycho-social problems of this population. Open to Level IV Doctor of Pharmacy students only.

PHRD 707 Outpatient Psychiatric Pharmacy APPE (6, FaSpSm)

Disease state management and pharmaceutical care in ambulatory mental health care. Modification and design of psychiatric therapy regimens, participation in multidisciplinary teams and patient care. Open to Level IV Doctor of Pharmacy students only.

PHRD 708 Inpatient Clinical Practice APPE (6, FaSpSm)

Drug therapy in a variety of inpatient clinical settings. Emphasis: patient monitoring, evaluation of therapeutic response, and provision of drug information.

PHRD 709 Pediatric Drug Therapy APPE (4-6, FaSpSm)

Clinical therapeutic and pharmacokinetic concepts applied to the pediatric patient. Unique aspects of pediatric clinical pharmacology emphasized in treating a variety of organ system diseases.

PHRD 710 Surgery APPE (6, FaSpSm)

Drug therapy in clinical situations common to surgical patients. The use of drugs and monitoring for response to treatment in surgical settings. Open to Level IV Doctor of Pharmacy students only.

PHRD 711 Cardiovascular Drug Therapy APPE (6, FaSpSm)

Pharmaceutical care applied to cardiac patients. The use of cardiac drugs with an emphasis on physiologic response, pharmacokinetic principles and desired treatment outcomes. Open to Level IV Doctor of Pharmacy students only.

PHRD 712 Applied Clinical Pharmacokinetics APPE (6, FaSpSm)

Practical experience in applying pharmacokinetic principles to patients in the health care system. A variety of disease states and therapeutic agents will be reviewed. Open to Level IV Doctor of Pharmacy students only.

PHRD 713 Drug Information APPE (6, FaSpSm)

Practical experience and training in the use of information resources and technology to improve patient care. Experience in information retrieval, literature evaluation, problem solving skills and communication skills emphasized. Open to Level IV Doctor of Pharmacy students only.

PHRD 714 Radiopharmacy APPE (6, FaSpSm)

Provides practical and theoretical aspects of radiopharmacy services delivery. Open only to Pharm.D. students.

PHRD 715 Oncology APPE (6, FaSpSm)

Directed experiences in the use and monitoring of oncological drugs. Open only to Pharm.D. students.

PHRD 716 Ob-Gyn APPE (6, FaSpSm)

Provides experiences in disease states common to this area and the drug therapy management employed. Open only to Pharm.D. students.

PHRD 717 Dermatology APPE (6, FaSpSm)

Provides experiences in disease states common to this area and the drug therapy management employed.

PHRD 718 Hospital Pharmacy Practice APPE (6, FaSpSm)

Practical experience and training in the practice of hospital pharmacy. Administrative, practice-based and therapeutic competencies emphasized. Open to Level IV Doctor of Pharmacy students only.

PHRD 719 Pain Management APPE (6, FaSpSm)

Pharmaceutical care principles applied to patients requiring treatment in pain management. Pharmacology, patient counseling and management emphasized. Open to Level IV Doctor of Pharmacy students only.

PHRD 720 Critical Care APPE (6, FaSpSm)

Drug therapy in a critical care setting. Emphasizes therapeutic management in critically ill patients, often with multi-system failure.

PHRD 721 Drug Utilization and Evaluation APPE (6, FaSpSm)

Practical experience and training in the design, implementation and evaluation instruments (DUE/MUE) to measure the appropriate use of therapeutic agents and the evaluation of desired therapeutic outcomes. Open to Level IV Doctor of Pharmacy students only.

PHRD 722 Home Health Care APPE (6, FaSpSm)

Practical experience in the provision of comprehensive home intravenous and nutritional support services, including fluid and electrolyte therapy, chemotherapy, antibiotics, pain control and nutrition support. Open to Level IV Doctor of Pharmacy students only.

PHRD 723 Nutritional Support APPE (6, FaSpSm)

Experiential training in the pharmacy specialty of nutritional support. Activities include: patient evaluation, developing treatment plans, formula composition and design, integration with nutritional support team and consult services. Open to Level IV Doctor of Pharmacy students only.

PHRD 724 Advanced Community Pharmacy APPE (6, FaSpSm)

Directed project in community pharmacy.

PHRD 725 International Pharmacy APPE (6, FaSpSm)

Practical experience and training in the practice of pharmacy in the international setting. Students will visit an international pharmacy practice setting and complete a project. Open to Level IV Doctor of Pharmacy students only.

PHRD 726 Directed Clinical APPE Project I (6, FaSpSm)

Directed educational opportunities not presently offered as electives, e.g., research projects or new and evolving clerkships.

PHRD 727 Directed Clinical APPE Project II (6, FaSpSm)

Directed educational opportunities not presently offered as electives, e.g., research projects or new and evolving clerkships.

PHRD 728 Directed Clinical APPE Project III (6, FaSpSm)

Directed educational opportunities not presently offered as electives, e.g., research projects or new and evolving clerkships.

PHRD 729 Directed Clinical APPE Project IV (6, FaSpSm)

Directed educational opportunities not presently offered as electives, e.g., research projects or new and evolving clerkships.

PHRD 730 Acute Care Geriatrics APPE (6, FaSpSm)

Pharmaceutical care principles applied to the acutely ill geriatric patient population. Emphasis on drug therapy problem solving, physiology, pharmacokinetics and compliance problems. Open to Level IV Doctor of Pharmacy students only.

PHRD 731 Advanced Geriatrics APPE (6, FaSpSm)

Directed projects and experiences in geriatric drug therapy.

PHRD 732 Pharmacy Administration APPE (6, FaSpSm)

Principles and practices of hospital pharmacy administration, management and departmental relationships. Practical experiences and projects emphasized. Open to Level IV Doctor of Pharmacy students only.

PHRD 733 Anticoagulation Therapy APPE (6, FaSpSm)

Management of patients requiring anticoagulation. Applied knowledge of disease pathophysiology, anticoagulant pharmacology, and laboratory methods toward safe and effective patient outcomes. Open to Level IV Doctor of Pharmacy students only.

PHRD 734 Antimicrobial Therapy APPE (6, FaSpSm)

Antimicrobial therapy, including antibiotic selection, dosage adjustment, and outcomes assessment of patients in the health care setting. Open to Level IV Doctor of Pharmacy students only.

PHRD 735 Clinical Pharmacy Research APPE (6, FaSpSm)

Drug research administration: research design; ethics; record-keeping; and institutional review. Practical experience and projects are emphasized. Open to Level IV Doctor of Pharmacy students only.

PHRD 736 Chemical Dependency APPE (6, FaSpSm)

The psychiatric, social, and pharmacological management of chemical dependency. Emphasizes the inpatient, day treatment, and outpatient components of detoxification and recovery.

PHRD 737 Clinical Transplantation APPE (6, FaSpSm)

Drug therapy to organ transplantation. Emphasizes pre- and post-transplantation therapy designed to minimize organ rejection, prevent infection, and improve survival.

PHRD 738 Pharmaceutical Industry APPE (6, FaSpSm)

Train within a pharmaceutical company to develop an understanding of the drug development, research, marketing process.

PHRD 739 AIDS/Immune Disorders APPE (6, FaSpSm)

A multidisciplinary approach to the management of AIDS and other immuno-compromised patients. Pharmacologic management is directed toward opportunistic infections, disease modifiers, and adjuvant therapy.

PHRD 740 Health Care Systems Administration APPE (6, FaSpSm)

Practical experience and training in managed care settings and health care systems. Emphasis on administrative principles, management and health outcomes. Students will complete a project. Open to Doctor of Pharmacy students only.

PHRD 741 Advanced Primary Care APPE (6, FaSpSm)

Advanced experience in disease state management in the primary care setting. Design drug therapy regimens using a team-based approach at an advanced level of practice. Open to Doctor of Pharmacy students only. *Prerequisite:* PHRD 704.

PHRD 790 Directed Research (1-12, max 12)

Research leading to doctorate in Clinical and Experimental Therapeutics. Graded CR/NC.

PHRD 794abcdz Doctoral Dissertation (2-2-2-2-0)

Dissertation research required for completion of Doctor of Philosophy in Clinical and Experimental Therapeutics.

PHARMACEUTICAL ECONOMICS AND POLICY (PMEP)**PMEP 509 Research Design (4, Fa)**

Introduction to the concept of research design and examples of the variant research methods utilized in the field. Both the conceptual and practical issues of research including development of the research question, selection of appropriate methods, data sources and analytic approaches to address the research question will be addressed.

PMEP 519 Survey Research and Quality of Life Assessment (4, Sp)

Skills to develop and assess surveys which are integral in Pharmaceutical Economics and Policy research. *Prerequisite:* PMEP 509; *recommended preparation:* biostatistics, econometrics.

PMEP 529 Risk, Probabilities and Preferences (4, Sp)

Analysis of economic and psychological constructs of risks, probabilities, and health related preferences and utilities.

PMEP 534 Health Economics I (4, Fa)

Techniques of microeconomic analysis to inform health policy. Topics include: demand for health, medical care, and insurance, risk selection, medical innovation. *Recommended preparation:* ECON 503 and ECON 514.

PMEP 538 Pharmaceutical Economics (4, Sm)

Introduction to pharmacoeconomics with special emphasis on the role of pharmaceuticals and the pharmaceutical industry, insurance, managed care, regulation and pricing. *Prerequisite:* ECON 500.

PMEP 539 Economic Assessment of Medical Care (4, Fa)

Principles of cost-benefit analysis and medical cost-effectiveness analysis with applications in medical care and the pharmaceutical field. *Prerequisite:* ECON 500 and ECON 581.

PMEP 544 Health Economics II (4, Sp)

Second part of series in techniques of microeconomic analysis to inform health policy. Topics include: patents and innovation, pharmaceutical regulation, hospital competition, physician practice. *Recommended preparation:* ECON 503, ECON 514 and PMEP 534.

PMEP 549 Applied Pharmacoeconometrics (4, Sp)

Use of quantitative models to describe and analyze pharmaceutical and health care markets; experimental design/power calculations; survival models; multiple indicator models; qualitative and limited dependent variables models; estimation and application of such models to selected problems. *Prerequisite:* ECON 615.

PMEP 590 Directed Research (1-12, FaSpSm)

Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PMEP 698 Seminar in Pharmaceutical Economics and Policy (1, max 4, FaSp)

Current research in pharmaceutical economics and policy presented by outside scholars, faculty and students. Graded CR/NC.

PMEP 790 Research (1-12)

Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PMEP 794abcdz Doctoral Dissertation (2-2-2-2-0)

Credit on acceptance of dissertation. Graded IP/CR/NC.

PHARMACEUTICAL SCIENCES (PSCI)**PSCI 531 Cell Biology (4)** (Enroll in INTD 531)**PSCI 556 Principal Research Approaches in PPSI (2, Fa)**

Familiarize new graduate students with basic approaches used in biomedical research with focus on data interpretation and experimental approaches. Graded CR/NC.

PSCI 557 Introduction to Tools and Techniques for Chemical Biology (2, Sp)

Multidisciplinary science where the knowledge of chemistry is utilized to solve problems in biology, and biological systems are evolved to gain new functions. This course aims to establish a great opportunity for graduate students at the interface of biology and chemistry. *Recommended preparation:* formal course work in chemistry and biochemistry.

PSCI 561 Molecular Genetics (4, Sp) (Enroll in INTD 561)**PSCI 571 Biochemistry (4, Fa)** (Enroll in INTD 571)**PSCI 590 Directed Research (1-12, FaSpSm)**

Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PSCI 594abz Master's Thesis (2-2-0, FaSp)

Credit on acceptance of thesis. Graded IP/CR/NC. *Prerequisite:* completion of all required course work for the M.S. degree.

PSCI 599 Special Topics (2-4, max 8, FaSp) Topics in advanced pharmaceutical sciences.

PSCI 601 Molecular Biology of Gene Regulation (2, max 8) (Enroll in BIOC 601)

PSCI 655 Immunopharmaceutics (2, 2 years, Fa) Lectures and discussion sessions on pharmaceutics-related immunology, including drugs affecting the immune system, antibodies and cytokines as drugs, and new developments in immunobiotechnology.

PSCI 661L Advanced Pharmaceutical Analysis (4, 2 years, Fa) Theory and application of quantitative instrumental techniques to the pharmaceutical sciences. Includes principles of chromatography, spectrophotometry, fluorescence, mass spectrometry and immunologic assays. Lecture and laboratory.

PSCI 662 Advanced Pharmacokinetics/Pharmacodynamics (2, max 4, FaSp) Principles of advanced pharmacokinetics/pharmacodynamics. Mathematical description of drug disposition processes. Design and evaluation of pharmacokinetic/pharmacodynamic studies. Advanced approaches to parameter estimates.

PSCI 663 Advanced Drug Delivery Systems (2, Fa) Design and applications of polymers, liposomes, micro/nanoparticles, prodrugs, and macromolecules for parenteral, oral, transdermal, respiratory and CNS drug delivery. *Prerequisite:* PSCI 665; *recommended preparation:* college level chemistry and biology.

PSCI 664 Drug Discovery and Design (4, FaSpSm) Principles of drug discovery, design and characterization. Mechanisms of action of major classes of drugs. Open only to students in management of drug development. *Recommended preparation:* college level chemistry and biology.

PSCI 665 Drug Transport and Delivery (4, Fa) Principles of cellular drug transport, in vivo drug transport, and modern drug delivery, including drug targeting. *Recommended preparation:* college level chemistry and biology.

PSCI 667 Intracellular Drug Delivery and Targeting (2, 2 years, Sp) Mechanisms of membrane trafficking and intracellular transport and the utilization of these mechanisms in drug delivery and targeting. *Recommended preparation:* college level chemistry and biology, INTD 531.

PSCI 756ab Seminar in Pharmaceutical Sciences (1-1, FaSpSm) Review of current pharmaceutical and related research topics.

PSCI 790 Research (1-12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PSCI 791L Research (2-12, no max) Directed research for the M.S. thesis or Ph.D. dissertation.

PSCI 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC.

REGULATORY SCIENCE (RSCI)

RSCI 520 Introduction to Risk Management for Health Care Products (2) Historical development, formal language and theoretical approaches to risk management in health care and medical product environment; policies, regulations, standards; liability prevention and loss control. (Duplicates credit in MPTX 520.) *Recommended preparation:* undergraduate degree in pharmacy, medical or independent health sciences, engineering or equivalent mix of post-secondary training and industry experience.

RSCI 521 Seminars in Regulatory Science (1, max 6, FaSpSm) Current problems in regulatory affairs, legal management, preclinical and clinical testing, scientific evaluation and quality assurance. (Duplicates credit in former MPTX 521.) Graded CR/NC. *Recommended preparation:* undergraduate degree in pharmacy, medical or independent health sciences, engineering or equivalent mix of post secondary training and industry experience; enrollment in M.S., Regulatory Science program.

RSCI 523 Advanced Concepts in Risk Management for Medical Products (3) Managing risk in demanding health-care and medical-product situations: clinical trials, emerging technologies, counterfeit prevention, hard-to-reach populations. *Recommended preparation:* undergraduate or professional degree in pharmacy, medicine or independent health sciences, engineering or equivalent mix of post-secondary training and industry experience; enrollment in M.S. (Regulatory Science), Certificate in Patient and Product Safety, or permission of instructor.

RSCI 525 Introduction to Drug and Food Toxicology (3) Factors affecting toxic responses to foods and drugs: dose-response relationships, absorption, distribution, biotransformation, elimination of toxicants; target organ toxicity, teratogenesis, mutagenesis, carcinogenesis, food allergies, risk assessment. *Recommended preparation:* undergraduate degree in pharmacy, medical or independent health sciences, engineering or equivalent mix of post-secondary training and industry experience.

RSCI 527 Medical Product Safety (3) Management of medical product safety by manufacturers/suppliers including: safe manufacturing, labeling, packaging; pharmacovigilance, field observations, complaint handling; record-keeping, safety issues documentation; crisis management/recalls. *Recommended preparation:* undergraduate degree in pharmacy, medical or independent health sciences, engineering or equivalent mix of post-secondary training and industry experience.

RSCI 528 Safety in the Health Care Environment (3) Regulatory expectations for health care facilities and services: JCAHO certification, environmental risk management, management of medical and medication errors, reduction of health hazards. *Recommended preparation:* undergraduate degree in pharmacy, medical or independent health sciences, engineering or equivalent mix of post-secondary training and industry experience.

RSCI 529 Application of Risk Management Tools and Techniques (2) Use of risk management tools in the medical products arena: functional analysis, fault-tree analysis, failure modes and effects analysis, HACCP and six sigma methods. *Recommended preparation:* undergraduate degree in pharmacy, medical or independent health sciences, engineering or equivalent mix of post-secondary training and industry experience.

RSCI 530 Translational Medicine: An Overview (2, FaSpSm) An overview of principles and concepts underlying drug discovery and development, including terminology of translational science. *Recommended preparation:* undergraduate degree in pharmacy, medical or independent health sciences, engineering or equivalent mix of post-secondary training and industry experience; enrollment in M.S., Regulatory Science, Certificate in Preclinical Drug Development and M.S., Management of Drug Development.

RSCI 531 Industrial Approaches to Drug Discovery (4, FaSpSm) Examines the process of drug discovery from selection of disease and therapeutic target to characterization and validation of lead drug candidates. *Recommended preparation:* undergraduate degree in pharmacy, medical or independent health sciences, engineering or equivalent mix of post-secondary training and industry experience; enrollment in M.S., Regulatory Science, Certificate in Preclinical Drug Development and M.S., Management of Drug Development.

RSCI 532 Early Stage Drug Development (3, FaSpSm) Explores the activities involved in transforming an early drug or biological candidate to a drug approved for marketing by regulatory authorities. *Recommended preparation:* undergraduate degree in pharmacy, medical or independent health sciences, engineering or equivalent mix of post-secondary training and industry experience; enrollment in M.S., Regulatory Science, Certificate in Preclinical Drug Development and M.S., Management of Drug Development.

RSCI 596 Internship for Curricular Practical Training in Regulatory Science (1, max 4, FaSpSm) Part-time or full-time practical work experience in Regulatory Science. The internship must be located at an off-campus facility. Students are individually supervised by faculty. Graded CR/NC. *Recommended preparation:* undergraduate or professional degree in pharmacy, medicine or independent health sciences, engineering or equivalent mix of post-secondary training and industry experience; enrollment in M.S. (Regulatory Science).

RSCI 601 Biomedical Commerce (4) Introduction to business principles appropriate to medical products, including: supply and demand, product entry-exit strategies, financing, reimbursement, marketing and pricing in global marketplace. *Recommended preparation:* undergraduate degree in pharmacy, medical or independent health sciences, engineering or equivalent mix of post-secondary training and industry experience; enrollment in M.S., Regulatory Science.

RSCI 603 Managing Complex Projects (3) Theory and methods to manage complex projects in medical products sectors; timelines, intellectual property, security, contracts, budgets, review activities, reports, electronic tools, cross-cultural communication. *Recommended preparation:* undergraduate or professional degree in pharmacy, medical or independent health sciences, engineering or equivalent mix of post-secondary training and industry experience.

RSCI 604 Regulatory Strategy in Asia (4) Regulatory policy, standards and practices in different Asian markets: product licensing, import/export management, materials sourcing, quality systems compliance, reimbursement, prescribing practices. Travel may be required. *Prerequisite:* MPTX 519; *recommended preparation:* undergraduate or professional degree in pharmacy, medical or independent health sciences, engineering or equivalent mix of post-secondary training and industry experience.

RSCI 605 Managing Organizations and Human Resources (3) Theory and practice of personnel management, organizational structure and industrial relations in small, growing enterprises and large global companies typical of pharmaceutical and medical device sectors. *Recommended preparation:* undergraduate or professional degree in pharmacy, medical or independent health sciences, engineering or equivalent mix of post-secondary training and industry experience.

RSCI 608 Regulatory Strategy in Europe and the Americas (4) Regulatory strategy in EU, Canada, Mexico and South America; culture, health-care practices, reimbursement, product registration, quality systems, trade restrictions, import/export requirements. Travel may be required. *Recommended preparation:* undergraduate or professional degree in pharmacy, medical or independent health sciences, engineering or equivalent mix of post-secondary training and industry experience.

RSCI 794abcdz Doctoral Dissertation (2-2-2-2-0) Dissertation research required for completion of doctoral degree in regulatory science. Graded IP/CR/NC.

USC Price

Sol Price School of Public Policy



The USC Price School of Public Policy has partnered with former California Governor Arnold Schwarzenegger to establish the USC Schwarzenegger Institute for State and Global Policy, dedicated to non-partisan implementation of policies in education, energy and the environment, fiscal and economic policy, health and human wellness, and political reform. "Knowing USC's reputation as one of the nation's leading policy schools, I could think of no better home for this institute," said Schwarzenegger.

The USC Price School of Public Policy provides a dynamic learning environment where interdisciplinary education abounds. At USC Price, students choose a program of study from the independent yet related fields of public administration, public policy, health management and policy, urban planning, real estate development and executive leadership. Students are supported by a committed faculty who contribute to the strong sense of community present in the school.

The school's mission is to improve the quality of life for people and their communities. Faculty engage in solving some of society's most pressing issues — and challenge students to do the same. USC Price is renowned for its expertise in areas such as: sustainability and the environment, health care policy, nonprofit management, housing and real estate, transportation, infrastructure, urban development and land use, social policy, governance, civic engagement, community development, immigration and risk analysis, among others.

Defining characteristics of USC Price are the depth of its academic classroom experience and connecting classroom theory to professional practice through practicums, internships and laboratory work locally, nationally and around the globe. Students graduate with the knowledge, skills and experiences to lead in their chosen field of practice.

Today's complex challenges call for leaders who are able to work across disciplines and across the public, private and nonprofit sectors to find solutions. It is for this multidisciplinary reality that USC Price prepares its students.

USC Price students go on to hold high-ranking appointments in our nation's capital, analyze and determine public policy, design new transportation systems, and redesign city, county, state and federal governance structures — in the United States and abroad.

Ralph and Goldy Lewis Hall 312**(213) 740-0350****FAX: (213) 740-5379****Email: price@usc.edu****usc.edu/schools/price****Administration**Jack H. Knott, Ph.D., *Dean*Elizabeth Graddy, Ph.D.*, *Vice Dean*Genevieve Giuliano, Ph.D.*, *Senior Associate Dean,**Research and Technology*Regina T. Nordahl, J.D., MBA, SPHR, *Associate Dean,**Administration*Carol A. Rush, MPA, *Associate Dean, Student Affairs*John Sonogo, M.A., *Associate Dean for Development*
*and External Relations***Faculty***C. Erwin and Ione L. Piper Dean's Chair:* Jack H. Knott,
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Journalism: Manuel Castells, Ph.D. (*Communication*)*Judith & John Bedrosian Chair in Governance & Public*
Enterprise: Raphael Bostic, Ph.D.*Blue Cross of California Chair in Health Care Finance:*
Glenn A. Melnick, Ph.D.*C.C. Crawford Chair in Management and Performance:*
Anthony Bertelli, Ph.D.*Margaret and John Ferraro Chair in Effective Local*
Government: Genevieve Giuliano, Ph.D.**James Irvine Chair in Urban and Regional Planning:*
Tridib Banerjee, Ph.D., FAICP**James Irvine Chair in Urban and Regional Planning:*
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(*Business*)*Jeffrey J. Miller Chair in Government, Business and the*
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Entrepreneurship & Public Policy: James M. Ferris, Ph.D*Quintiles Chair in Pharmaceutical and Regulatory*
Innovation: Darius Lakdawalla, Ph.D. (*Pharmacy*)*Leonard D. Schaeffer Director's Chair of the USC*
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Democratic Values: Terry L. Cooper, Ph.D.*Governor Downey Professor of State and Global Policy:*
Arnold Schwarzenegger*Frances R. and John J. Duggan Distinguished*
Professor of Public Administration: Shui Yan Tang,
Ph.D.**Houston Flournoy Professor of State Government:*
Juliet Musso, Ph.D.**William M. Keck Professor of Energy Resources:* Donald
Paul, Ph.D. (*Engineering and Earth Sciences*)*Dr. Chester A. Newland Professor of Public*
Administration: Janet Vinzant Denhardt, DPA*Presidential Professor of Health Economics:* Daniel
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Economy: Mathew McCubbins, Ph.D. (*Finance and*
Business Economics)*Judge Widney Professor:* Leonard D. Schaeffer*Judge Widney Professor of Poetry and Public Culture:*
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Ph.D. (*Political Science*); Elizabeth Garrett, J.D.
(*Law*); Peter Gordon, Ph.D. (*Economics*); Howard
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Ph.D.; Jacquelyn McCroskey, Ph.D. (*Social Work*);
James Moore II, Ph.D. (*Engineering*); Dowell Myers,
Ph.D.; Michael Nichol, Ph.D. (*Pharmacy*); Gary
Painter, Ph.D.; Manuel Pastor, Ph.D. (*Geography and*
American Studies and Ethnicity); Jane Pisano, Ph.D.;
Jon Pynoos, Ph.D. (*Gerontology*); Alison D. Renteln,
Ph.D.* (*Political Science*); David Sloane, Ph.D.; Robert
Suro (*Journalism*); Detlof von Winterfeldt, Ph.D.
(*Engineering*)*Associate Professors:* Elizabeth Currid-Halkett, Ph.D.;
Christian Redfearn, Ph.D.; Peter Robertson Ph.D.*;
Lisa Schweitzer, Ph.D.; Jeffrey Sellers, Ph.D., (*Political*
Science); Kathleen Wilber, Ph.D. (*Gerontology*)*Assistant Professors:* Nicole Esparza, Ph.D.; Marco
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Ph.D.; Jenny Schuetz, Ph.D.; Vivian Wu, Ph.D.*Distinguished Fellow:* Stan Ross, Honorary J.D.*Senior Fellows:* Robert Denhardt, Ph.D.; William B.
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Frank Zerunyan, J.D.*Research Professors:* Hilda Blanco, Ph.D.; Stephen
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Earth Sciences); Adam Rose, Ph.D.*Research Associate Professors:* Michael Cousineau,
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Heather Rosoff, Ph.D.; Dan Wei, Ph.D.*Clinical Professor:* Leonard Mitchell, M.A., MBA, J.D.*Teaching Professor:* LaVonna B. Lewis, Ph.D.*Teaching Assistant Professors:* Elizabeth Falletta,
MRED; T.J. McCarthy, Ph.D.; Jennifer Miller, Ph.D.;
Michael Thom, Ph.D.*Adjunct Professors:* Jonathan Brown, DPA; Garrett
Capune, Ph.D.; Robert Champion, MRED; Charles
Cicchetti, Ph.D.; Thomas Collins, Ed.D.; Tim Gage, MPP;
Patrick G. Hays, MHA; Lori Howard, Ph.D.; Stanley
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FACMPE; Catherine Kay, J.D.; Michael Keston, MBA;
Allan Kotin, M.A.; Ehud Mouchly, M.A.; Ira Norris, MBA;
Tomson Ong, J.D., Ph.D., LL.M.; James Osterling, MBA;
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Janis Breidenbach, M.A.; Ali Farahani, Ph.D.; James
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MBA; Daniel Haverty, DPA; Robert Ingenito, M.A.; Bryan
Jackson, J.D.; Daniel Jordan, Ph.D.; Steven Kellenberg,
M.A.U.D.; Michael Kodama, M.A.; Kathy Kolnick, Ph.D.;
Carl Meyer, M.Arch.; Maurice Rahimi, Ph.D.; Ellen
Riley, MBA; Jeffrey Schaffer, MPA; H. Eric Schuckman,
Ph.D.; Susan Sinclair, MBA; Jeffrey Smith, Ph.D.; Helene
Smookler, Ph.D.; Halil Toros, Ph.D.; Deborah Torres,
M.Arch.; Clyde Wesp, M.D.; Jack Wong, M.A.*Adjunct Assistant Professors:* Deepak Bahl, MPH;
Michael Carter, MPH; Terri Dickerhoff, MRED; Melissa
Gaeke, Ph.D.; Matt Gainer, MFA; Todd Gish, Ph.D.; Ray
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Ph.D.; Richard A. Hagy, Ph.D.; Ryan Millsap, Ph.D.;
Donald Morgan, Ph.D.; Bret Nielsen, MRED; Mark E.
Oliver, MRED; Deike Peters, Ph.D.; Chris Van Gorder,
MPA; Chris Wilson, MBA; Diane Yoder, Ph.D.*Frances R. and John J. Duggan Professor Emeritus in*
Public Administration: Chester A. Newland, Ph.D.*Emeritus Professors:* William C. Baer, Ph.D., AICP;
Gerald Caiden, Ph.D.; Robert M. Carter, D.Crim.;
T. Ross Clayton, Ph.D.; Lois Friss, Dr.P.H.; David
Lopez-Lee, Ph.D.; David Mars, Ph.D.; Robert C. Myrtle,
DPA; E.K. Nelson, DPA; William Petak, DPA; Francine
Rabvinovitz, Ph.D., AICP; Warren Schmidt, Ph.D.;
Gilbert Siegel, Ph.D.; Robert Stallings, Ph.D.; Richard A.
Sundeen, Ph.D.*; Robert E. Tranquada, M.D.; Joseph S.
Wholey, Ph.D.; William J. Williams, DPA*Emeritus Associate Professors:* Wesley E. Bjur, Ph.D.;
Catherine Burke, Ph.D.**Recipient of university-wide or school teaching award.*

Degrees Offered

The Price School of Public Policy offers the following degrees:

- Bachelor of Science in Policy, Planning and Development
- Master of Health Administration
- Executive Master of Health Administration
- Master of Science in Health Systems Management Engineering (with Industrial and Systems Engineering)
- Executive Master of Leadership
- Master of Public Policy and Management
- Master of Planning
- Master of Planning and Development Studies
- Master of Public Administration
- Master of Public Policy
- Master of Real Estate Development
- Doctor of Philosophy in Public Policy and Management
- Doctor of Philosophy in Urban Planning and Development
- Doctor of Policy, Planning, and Development

The Bachelor of Science and the school's master's degrees are also offered jointly as a progressive five-year

program and the school participates in the following interdisciplinary minors:

- Children and Families in Urban America
- Construction Planning and Management
- Environmental Planning and Development
- Health Policy and Management
- International Policy and Management
- Law and Public Policy
- Nonprofits, Philanthropy and Volunteerism
- Real Estate Development
- Urban Policy and Planning

The Master of Planning is offered as a dual master's degree with programs in architecture, landscape architecture, art and curatorial practices in the public sphere, business administration, economics, gerontology, public administration, public health, public policy, real estate development and social work.

The Master of Public Administration is offered as a dual master's degree with programs in planning, gerontology, Jewish nonprofit management, law and social work.

The Master of Real Estate Development is offered as a dual degree with the Master of Business Administration, Juris Doctor and Master of Planning.

The Master of Health Administration is offered as a dual degree with the Master of Science in Gerontology.

The Master of Public Policy is offered as a dual degree with programs in law and planning.

National Honor Societies

Pi Alpha Alpha

Pi Alpha Alpha is the national honor society for public affairs and administration. Graduate students in the Price School of Public Policy who have completed at least 18 semester units and have earned a 3.7 grade point average are eligible for membership.

Pi Sigma Alpha

Pi Sigma Alpha is the national honor society for students in public administration, political science, and international relations. Students who have completed at least three courses from among these fields and have earned at least a 3.5 grade point average are eligible to apply.

Undergraduate Degrees

The Price School of Public Policy offers a suite of degrees that allow undergraduate students to gain the skills and knowledge necessary to understand complex health, environmental and urban issues, as well as to potentially enter the professional fields of health and nonprofit management, public policy, real estate development, and urban planning. Students may enroll in the Bachelor of Science in Policy, Planning, and Development, or a challenging set of minors, or possibly the very competitive progressive degrees associated with the Master of Health Administration, Master of Planning and Master of Public Administration.

Admission

Freshman and transfer students may indicate their desire to declare policy, planning, and development as a major on their university application. Students enrolled at USC wishing to declare the major or to be admitted into the minors must be in good academic standing. Interested current USC students should contact the Admissions and Recruitment Office in RGL 111 for more information.

Advisement

Students must discuss courses of study with the appropriate undergraduate advisers throughout their college enrollment and need to develop their own individual programs with faculty and staff advisers at the time of first enrollment and throughout their college careers.

Bachelor of Science in Policy, Planning, and Development

The Bachelor of Science in Policy, Planning, and Development is an interdisciplinary major that prepares students for graduate study and/or professional careers by engaging them in the analysis of society's political, social and economic issues in such areas as environment, health care and urban life. The major introduces

students to theoretical foundations and practical applications through a set of cross-cutting introductory courses and specialized courses in one of five tracks: health policy and management, public policy and law, nonprofits and social innovation, real estate development, or sustainable planning. Students will be introduced to analytical and research tools, including economics, Geographic Information Systems, statistics, urban design, and applied field research. Throughout, the students' education will be connected to professional practice, as exemplified by the mandatory internship. Finally, the major is structured to provide students with sufficient elective credits to explore minors or other programs at USC so they can broaden their education to better prepare themselves for the next stage of their lives.

General Education Requirements

The university's general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. This program requires six courses in different categories, plus writing and diversity requirements, which together comprise the USC Core. See pages 63xx and 250xx for more information.

Major Requirements

A minimum grade of C-, 1.7 (A = 4.0) must be earned in each PPD course specifically listed as a degree requirement. In addition, a minimum grade point average of C (2.0) or higher must be achieved to earn all Price degrees. The GPA for all upper division PPD courses applied toward the major must also be a C (2.0) or higher. No more than 16 units of PPD course work may be taken prior to the successful completion of pre-major requirements.

Pre-major Requirements

A minimum grade of C, 2.0 (A = 4.0), must be earned in each of the pre-major courses.

All pre-major requirements must be taken for a letter grade.

Math

MATH 117 (4)

Economics

ECON 203 Microeconomics (4)

General Electives (26 units)

PPD CORE COURSES (30 UNITS)		UNITS
PPD 225	Public Policy and Management (gateway course)	4
PPD 227	Urban Planning and Development (gateway course)	4
PPD 240	Citizenship and Public Ethics	4
PPD 245	The Urban Context for Policy and Planning	4
PPD 357	Government and Business	4
PPD 301	PPD Practices: Internship Seminar	2
PPD 303	Statistics for Policy, Planning and Development	4
PPD 373	Public Policy and Planning Analysis	4

Tracks

Students select one track for degree emphasis; they take 28 units (seven courses) from the track selected. Each track includes four required courses and three elective courses. During advisement, students will be given a list of recommended elective courses particularly appropriate for the chosen track, but students have the flexibility to craft the electives out of Price School

courses to meet their academic needs. The four requirement courses for each track are listed below.

HEALTH POLICY AND MANAGEMENT UNITS

Required courses:

PPD 325	Fundamentals of Health Policy and Management	4
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Health Policy Focus:

PPD 314	Public Policy and Law	4
PPD 315	Analytical Foundations for Public Policy	4
PPD 415	Health Policy	4

Health Management Focus:

PPD 320	Organizational Behavior in Public Administration	4
PPD 407	Financial Management of Public and Nonprofit Organizations	4
PPD 413	Administration of Health Care Organizations	4

Electives (select 3):

Health Policy Focus:

GERO 416	Health Issues in Adulthood	4
HP 408	Environmental Health in the Community	4
HP 412	Health Promotion and Prevention Policy	4
PPD 330	Introduction to Health Care Systems	4
PPD 413	Administration of Health Care Organizations	4
PPD 414	Community Health Policy and Planning	4

(Study abroad if applicable to track)

Health Management Focus:

PPD 318	Financial Accounting in Public and Nonprofit Organizations	4
PPD 330	Introduction to Health Care Systems	4
PPD 403	Management Analysis I	4
PPD 414	Community Health Policy and Planning	4
PPD 478	Social Innovations	4

(Study abroad if applicable to track)

PUBLIC POLICY AND LAW UNITS

Required courses:

PPD 313	Finance of the Public Sector	4
PPD 314	Public Policy and Law	4
PPD 315	Analytical Foundations for Public Policy	4
POSC 340	Constitutional Law	4

Electives (select 3):

ECON 434	Economic Analysis of Law	4
LAW 200X	Law and Society	4
POSC 444	Civil and Political Rights and Liberties	4
PPD 342	Crime and Public Policy	4
PPD 410	Comparative Urban Development	4

PPD 415	Health Policy	4
PPD 439	Housing and Community Development	4
PPD 461	Sustainable Communities, Policy and Planning	4
PPD 478	Social Innovations	4
PPD 485	U.S. Immigration Policy and Liberties	4

Washington, D.C. Semester
(Study abroad if applicable to track)

NONPROFITS AND SOCIAL INNOVATION UNITS

Required courses:

PPD 371	The Nonprofit Sector and the Public Interest	4
PPD 402	Management of Public and Nonprofit Organizations	4
PPD 407	Financial Management of Public and Nonprofit Organizations	4
PPD 478	Social Innovations	4

Electives (select 3):

BUCO 485	Business Communication Management for Nonprofits	4
IR 371	Global Civil Society: Non-State Actors in World Politics	4
PPD 318	Financial Accounting in Public and Nonprofit Organizations	4
PPD 320	Organizational Behavior in Public Administration	4
PPD 353	Introduction to Philanthropy and Grant-Writing	4
PPD 372	Public Service in an Urban Setting	4
PPD 382	International Development	4
PPD 403	Management Analysis I	4

(Study abroad if applicable to track)

REAL ESTATE DEVELOPMENT UNITS

Required courses:

FBE 400X	Introduction to Real Estate Finance and Development	4
PPD 362	Real Estate Fundamentals for Planning and Development	4
PPD 417	History of Planning and Development	4
PPD 437	Advanced Finance and Investment for Planning and Development	4

Electives (select 3):

CE 460*	Construction Engineering	3
FBE 427	Real Estate Law	4
PPD 410	Comparative Urban Development	4
PPD 420	Environmental Impact Assessment	4
PPD 425	Designing Livable Communities	4
PPD 435	Analyzing Real Estate Markets for Planning and Development	4
PPD 438	Local Economic Development	4

PPD 439	Housing and Community Development	4
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(Study abroad if applicable to track)

**Students in the real estate track who select CE 460 as an elective will earn 27 units rather than 28 in the track and will require 27 units of general electives rather than 26 to reach 128 units total.*

SUSTAINABLE PLANNING UNITS

Required courses:

PPD 417	History of Planning and Development	4
PPD 420	Environmental Impact Assessment	4
PPD 427L	Geographic Information Systems and Planning Applications	4
PPD 461	Sustainable Communities, Policy and Planning	4

Electives (select 3):

PPD 306	Visual Methods in Policy, Management, Planning and Development	4
PPD 358	Urban and Regional Economics	4
PPD 360	Urban Transportation Planning and Policy	4
PPD 362	Real Estate Fundamentals for Planning and Development	4
PPD 410	Comparative Urban Development	4
PPD 414	Community Health Policy and Planning	4
PPD 425	Designing Livable Communities	4
PPD 438	Local Economic Development	4
PPD 439	Housing and Community Development	4

(Study abroad if applicable to track)

The faculty director of the undergraduate program may approve students' petitions to substitute or mix track classes if based on an appropriate academic/career rationale.

Capstone

All students will take four units of a capstone experience during their senior year. This may be fulfilled by taking PPD 431L Undergraduate Policy, Planning, and Development Studies (4) or PPD 497ab Senior Thesis (2-2). Students wishing to enroll in PPD 497ab must have a 3.7 GPA in PPD courses and an overall 3.5 GPA.

Internships

Policy, Planning and Development majors are required to complete 140 hours of internship by enrolling in PPD 301 PPD Practices: Internship Seminar or the Washington, D.C., Semester internship. Internships are matched as closely as possible to the student's interests and skills.

PPD 301 and the internship in a position provide numerous opportunities to develop and formulate future career goals, as well as to gain personal and professional experience while completing the undergraduate degree.

Honors

Price School honors are available at graduation to qualified PPD majors and result in a special designation of departmental honors on a student's transcript. Achievement of PPD honors requires a 3.7 GPA in PPD major courses and a 3.5 overall GPA as well as nomination by the professor in the capstone experience. In addition, students must earn an A in their capstone course (PPD 497ab or PPD 431).

Washington, D.C., Semester

The Washington, D.C., Semester program provides an intensive semester of confrontation with the political center of the nation and its complex components. The program offers opportunities for behind-the-scenes work in national government agencies and related organizations, combined with an academic environment and the chance to explore, share and learn with a group of fellow students.

Progressive Degrees in the Price School of Public Policy

The Price School of Public Policy offers students who have demonstrated exceptional academic success the opportunity to earn both bachelor's and master's degrees in a progressive degree program. This program allows students to earn both the Bachelor of Science and a master's degree in five years. Further details about progressive degrees can be found on page 87xx.

Admission

Admission is available after the completion of 64 units of course work toward the undergraduate degree. Students must apply for admission to the progressive degree program after completing 64 units of applicable course work to their undergraduate programs, but prior to the completion of 96 units of course work (not including AP, IB or courses taken prior to high school graduation). The application for admission to the progressive degree plan must be accompanied by a course proposal plan and two letters of recommendation with one at least from a Price School faculty member.

Awarding of Degrees

The Bachelor of Science and master's degree may be awarded separately upon completion of all degree requirements, but the master's degree will not be awarded before the bachelor's degree. Students who elect not to complete the master's, must complete 128 units to earn the bachelor's degree, including 32 units of upper division Price course work (including any graduate Price classes).

Time Limits

All requirements for the progressive degree must be completed within 12 semesters. If not completed within that time, students will no longer be eligible for the master's degree but may still earn the bachelor's.

Transfer of Credits

Graduate courses will not be accepted for transfer credit. Undergraduate classes may be transferred in accordance with university guidelines.

Minor Programs

Minor in Children and Families in Urban America

What's happening to children and families in urban America? Students will examine changing demographics, economics, and cultures and the challenges of building communities that support families. They will assess innovative ways to improve access to and utilization of human services, including inter-professional practice, integrated services and community-based initiatives. Analysis of current social policies and policy reform initiatives will provide a framework for students who want to help improve student outcomes for children and families.

This minor includes courses from social work, planning, psychology, communication, education and other academic areas. It requires 22 units. See the USC School of Social Work section (page 929xx) for course requirements.

Minor in Construction Planning and Management

This program covers the most current theories and practice of construction planning and management. The program provides a valuable adjunct credential to professional school students pursuing careers in business administration, public administration, environmental studies, and other areas; and a unique opportunity for professional focus to students in the USC Dornsife College of Letters, Arts and Sciences.

Construction activities are complex. In contemporary society, effective planning and management of these activities requires specialized knowledge of the technical, economic and political environment. This program couples the knowledge of how construction activities are organized with a broader understanding of the urban system in which construction projects are embedded. With the exception of statistics, all of the required courses are within the Department of Civil Engineering and the Price School of Public Policy.

Any USC undergraduate who has completed the equivalent of two full-time semesters in good standing is eligible to pursue the minor program. This minor program is rigorous enough to serve as an introductory credential for students subsequently electing to pursue advanced studies in development, urban planning, construction management or allied fields.

See the Department of Civil Engineering (page 624xx) for course requirements.

Minor in Health Policy and Management

This 24-unit minor in health policy and management provides students with a background in the institutions, policy and management issues in the field of health care and the skills necessary to pursue a range of health-related management and/or policy opportunities in the for-profit, nonprofit and governmental sectors. This minor is appropriate for students interested in pursuing careers in the health care field, especially students majoring in pre-health services fields, business, gerontology or the social sciences.

REQUIRED COURSES		UNITS
PPD 325*	Fundamentals of Health Policy and Management	4

PPD 330	Introduction to Health Care Systems	4
PPD 415*	Health Policy	4

ELECTIVES

Choose three courses from one of the two tracks:

Health Issues Track		UNITS
ECON 472*	Economics of Medical Care	4
GERO 416	Health Issues in Aging	4
GERO 421	Managed Care for an Aging Society	4
HP 412	Health Promotion and Prevention Policy	4
HP 420	Gender and Minority Health Issues	4
HP 422	AIDS in Society	4
PPD 414	Community Health Policy and Planning	4
SOCI 475	Medical Sociology	4

Health Management Track

ECON 472*	Economics of Medical Care	4
PPD 316	Human Resource Management for Public Organizations	4
PPD 318	Financial Accounting in Public and Nonprofit Organizations	4
PPD 320	Organizational Behavior in Public Administration	4
PPD 407*	Financial Management of Public and Nonprofit Organizations	4
PPD 413	Administration of Health Care Organizations	4

*Prerequisite required

Minor in International Policy and Management

The minor in international policy and management brings together courses from the School of International Relations, dealing with the new global challenges, specific regions of the world, and international organizations and policies, and the Price School of Public Policy, dealing with core management skills and public policy processes. Students will examine the changes and challenges which are transforming the world, and the policy and management skills used to deal with them. To increase their understanding of the context and application of these concepts, students must complete a semester-long internship either in Washington, D.C. (through participation in the Washington, D.C. semester program) or in Los Angeles with an organization that has an international focus.

Students minoring in international policy and management take three courses in international relations, including the gateway course, IR 305 Managing New Global Challenges; three courses in public policy and management; and an approved internship through the School of International Relations (IR 491 Field Study). For additional course information, see International Relations (page 378xx).

Minor in Law and Public Policy

The minor in law and public policy draws upon four fields of study: public policy and management, law, economics and political science. It provides students with

an understanding of the political and economic contexts in which laws are made as well as how legal institutions shape policy formulation. Students learn to analyze the consequences of policy and alternatives; the roles played by government, business and nonprofit organizations in public decision making; and the legal bases for various areas of public policy.

Students minoring in law and public policy take six required courses, including the gateway class, PPD 225 Public Policy and Management, and one elective. The latter enables the student to focus on a specific area of law.

REQUIRED COURSES		UNITS
ECON 203	Principles of Microeconomics	4
LAW 200x	Law and Society	4
POSC 340	Constitutional Law	4
PPD 225	Public Policy and Management	4
PPD 303	Statistics for Policy, Planning, and Development	4
PPD 373*	Public Policy and Planning Analysis	4
And one of the following:		
ECON 434	Economic Analysis of Law	4
FBE 403	Introduction to the Legal Environment of Business	4
POSC 345	International Law	4
POSC 347	Environmental Law	4
POSC 432	The Politics of Local Criminal Justice	4
POSC 440	Comparative Law and the Judicial Process	4
POSC 441	Cultural Diversity and the Law	4
POSC 444	Civil and Political Rights and Liberties	4
POSC 452	Critical Issues in Law and Public Policy	4
PPD 314*	Public Policy and Law	4
PPD 315*	Analytic Foundations for Public Policy	4

*Prerequisite required

Minor in Nonprofits, Philanthropy and Volunteerism

This four-course minor enables students to learn about the nonprofit sector — its organizations, philanthropy and voluntary action. The three course core provides: (1) an overview of the nonprofit sector and philanthropy and its role in the United States, including its historical and theoretical foundations, its various components and its relation to public policy; (2) a focus on voluntary action and service as one means for social change and problem-solving; and (3) insights into the management of nonprofit organizations. Students select an elective that extends their understanding to the role of nongovernmental organizations in international affairs or to the role of public relations for nonprofits.

This minor is intended for students who plan (1) to work in a nonprofit or charitable organization, whether it is a large organization such as United Way, a small social service agency, an environmental advocacy group, a museum or a religious organization, (2) to participate with nonprofits as a volunteer throughout their lives or (3) pursue further graduate work in a service-related profession.

REQUIRED COURSES		UNITS
PPD 371	The Nonprofit Sector and the Public Interest	4
PPD 402	Management of Public and Nonprofit Organizations	4
PPD 478	Social Innovations	4
Electives (select one)		
BUCO 485	Business Communication Management for Nonprofits	4
JOUR 455*	Public Relations for Non-Profit Organizations	4
IR 371	Global Civil Society: Non-State Actors in World Politics	4
PPD 318	Financial Accounting in Public and Nonprofit Organizations	4
PPD 320	Organizational Behavior in Public Administration	4
PPD 353	Introduction to Philanthropy and Grant Writing	4
PPD 372	Public Service in an Urban Setting	4
PPD 382	International Development	4
PPD 403	Management Analysis I	4
*Prerequisite: JOUR 350		

Minor in Real Estate Development

This minor provides students with an overview of the field of real estate development — its principles, market analysis, finance and history, as well as the opportunity to pursue more specialized interests and skills through a set of electives (including courses in architecture, civil engineering and business). It is a 23–24 unit minor, requiring four core courses and two electives. The minor is intended for any students with interests in careers in real estate development or other areas that might be related to real estate development, such as local government, non-profit housing and land use enterprises, urban economics, public-private partnerships or related entrepreneurial ventures.

REQUIRED COURSES		UNITS
FBE 400x	Introduction to Real Estate Finance and Development	4
PPD 362	Real Estate Fundamentals for Planning and Development	4
PPD 417	History of Planning and Development	4
PPD 437*	Advanced Finance and Investment for Planning and Development	4
Electives (select two):		
CE 460**	Construction Engineering	3
FBE 427	Real Estate Law	4
PPD 410	Comparative Urban Development	4
PPD 420	Environmental Impact Assessment	4
PPD 425	Designing Livable Communities	4
PPD 435	Analyzing Real Estate Markets for Planning and Development	4
PPD 438	Local Economic Development	4

PPD 439	Housing and Community Development	4
PPD 461	Sustainable Communities, Policy and Planning	4
		23–24
*Prerequisite: MATH 117 and PPD 362		
**7 units if CE 460 is selected		

Minor in Urban Policy and Planning

The 28-unit minor in urban policy and planning focuses on the application of public policy, urban planning and public management to the analysis and solution of urban problems. It draws upon the interdisciplinary faculty and programs of the Price School of Public Policy and includes foundational courses that introduce students to the nature of urban phenomena and the analysis and solution of urban problems. The minor also introduces students to the professional and academic fields of either urban planning and development or public policy and public management. Additionally, based on their specific interests, students have the opportunity to explore in greater depth three areas and approaches of urban problem-solving. This minor is appropriate for students interested in expanding their understanding of the fields of urban planning and public policy and management as potential professional careers as well as increasing their comprehension of the analysis and solution of urban problems.

REQUIRED COURSES (20 UNITS)		UNITS
<i>Foundational Courses (12 units)</i>		
PPD 225	Public Policy and Management	4
PPD 245	The Urban Context for Policy and Planning	4
PPD 303	Statistics for Policy, Planning, and Development	4
<i>Organizations in the Urban Context (4 units)</i>		
PPD 314*	Public Policy and Law	4

ELECTIVE COURSES (8 UNITS)		UNITS
Students select two courses from this list. They are encouraged through advisement to consider course clusters that reflect special interests.		
PPD 315*	Analytical Foundations for Public Policy	4
PPD 342	Crime and Public Policy	4
PPD 360	Urban Transportation Planning and Policy	4
PPD 362	Real Estate Fundamentals for Planning and Development	4
PPD 371	The Nonprofit Sector and the Public Interest	4
PPD 372	Public Service in an Urban Setting	4
PPD 425	Designing Livable Communities	4
PPD 439	Housing and Community Development	4
PPD 461	Sustainable Communities, Policy and Planning	4
*Prerequisite required		

Aerospace Studies

Physical Education Building 112
(213) 740-2670

Administration

Sean C. Marler, M.Ed., *Lieutenant Colonel, USAF*

Faculty

Professor: Sean C. Marler, M.Ed., (*Lieutenant Colonel, USAF*)

Assistant Professors: Casey Whitson, B.S., (*Captain, USAF*); Matthew Stewart, B.S., (*Captain, USAF*)

The Department of Aerospace Studies offers a three to four-year program of instruction leading directly to commissioning as an officer in the United States Air Force. To obtain a commission, qualified students must pass an aptitude test, physical fitness assessment and a medical examination; complete the aerospace studies program of instruction and concurrently receive an undergraduate or graduate degree. Credits earned in aerospace studies courses may be counted

as electives in some degree programs. Those students who qualify for and are selected to enter Air Force pilot training will be given flight instruction upon graduation. Qualified applicants may compete for a variety of Air Force scholarships, some of which pay full tuition, books and associated fees. USC also offers a matching \$4,000 scholarship per year for all AFROTC scholarship recipients. See page 46xx for additional scholarship information.

Program Requirements

Academic Year Program

This program consists of up to eight semesters of aerospace studies courses (AEST 100ab through AEST 400ab) plus a four-week summer field training course. Students enroll in the first four semesters of aerospace studies (AEST 100ab and AEST 200ab) in the same manner as in any other course of instruction at USC. Students will be considered on a competitive basis to attend the summer field training course and enroll in the final four semesters (AEST 300ab and AEST 400ab). The

program can be tailored for students who join after the beginning of their freshman year.

Summer Training Courses

Field training is offered during the summer at Maxwell Air Force Base in Montgomery, Alabama. Students participate in four weeks of intensive training, normally between their sophomore and junior years.

The major areas of study in the field training course include junior officer leadership training, career orientation, survival training, weapons training, physical training, base functions and the Air Force environment.

Additional summer training courses at locations around the world are available to interested students to build leadership and human relations skills, develop cultural and language proficiency, provide a general orientation in Air Force specialties and motivate cadets toward an Air Force career. The training opportunities vary each year but may include cultural and language immersion programs, engineering research and apprenticeships, and orientation programs related to other air, space and cyberspace specialties.

Military Science

Physical Education Building 110
(213) 740-4026

Administration

Justin M. Chezem (*Lieutenant Colonel, U.S. Army*)

Faculty

Professor/Commander: Justin M. Chezem (*Lieutenant Colonel, U.S. Army*)

The Department of Military Science provides professional training for students leading to a commission, upon graduation, in the Active Army, Army Reserve or the Army National Guard. Through the Army Reserve Officers' Training Corps Program (AROTC), scholarship benefits include full tuition, fees and book stipends. Scholarships are also available for Guaranteed Reserve Forces Duty. Military science instruction is focused on hands-on leadership development and the practical application of military skills needed to produce America's future leaders. Additionally, military science courses count as electives in many degree programs. MS 101 and MS 102 are open to students who are not enrolled in the program, but have an interest in leadership, management, military history or military training. Enrollment in the Army ROTC program is open to qualified full-time students.

Scholarship Program

The majority of Army ROTC cadets attend USC on Army scholarships. All Army scholarships are merit-based and are not dependent on individual financial need.

Scholarships are available for both Active Duty and Guaranteed Reserve Forces Duty. Scholarships are awarded on a competitive basis to qualified applicants for two-, three- or four-year periods depending on the applicant's academic level and program of

study. Scholarship cadets receive benefits that cover full tuition, fees and a book stipend, and are available to all majors. See page 46xx for additional scholarship information.

Enrolled Cadets

Contracted scholarship and non-scholarship cadets can receive a monthly stipend subsistence allowance, based on academic class. Contracted scholarship cadets receive an annual book allowance. All enrolled scholarship and non-scholarship cadets receive uniforms and military science textbooks from the department.

Four-Year Program

The four-year military science curriculum is designed to be part of the student's undergraduate degree program. During the freshman and sophomore years, students receive introductory instruction in the theory of warfare, military history, military leadership and basic military skills. Cadets participate during their junior and senior years in a professional development program with instruction in leadership, management, military justice and advanced military skills.

Three-Year Program

The three-year program is available to qualified sophomore undergraduate students. Students may compress the first two years of the ROTC program by attending two ROTC classes per semester during their sophomore year. Scholarships are available, on a competitive basis, for students with three years remaining toward the completion of their undergraduate degree. Transfer students who meet the same criteria are also eligible for scholarships. Upon acceptance, students then follow the military science program described for the four-year program.

Two-Year Program

The two-year program is available to qualified junior and senior undergraduate students and graduate students who have two years of academic work remaining. Veterans who have achieved junior academic status and meet enrollment criteria are also eligible for this program. Students may receive credit for the first two years of the ROTC program by attending the ROTC Leaders Training Course or by previous junior ROTC participation. Transfer students who meet the same criteria are also eligible for scholarships. Upon acceptance, students then follow the military science program described for junior and senior cadets in the four-year program.

Field Training

Several military training programs are available to qualified cadets. A five-week paid Leaders Training Course at Fort Knox, Kentucky, qualifies students for the two-year program. All cadets attend a 32-day paid ROTC Leadership Development and Assessment Course at Fort Lewis, Washington, after their junior year. This course provides practical application of advanced military and leadership skills required for commissioning.

Adventure Training

Qualified candidates may also receive training in Airborne school, Air Assault school (rappelling from helicopters), Cadet Troop Leadership Training (training in Army units around the world), Northern Warfare school (Arctic survival) and Mountain Warfare school.

Naval Science

Physical Education Building (PED) 101
(213) 740-2663

Administration

John W. Carl, MPA (*Colonel, U.S. Marine Corps*),
Commanding Officer

Faculty

Professor: John W. Carl, MPA (*Colonel, U.S. Marine Corps*)

Associate Professor: Matthew J. Moward, M.S.
(*Commander, U.S. Navy*)

Assistant Professors: Mark E. Burrell, B.S. (*Major, U.S. Marine Corps*); Raymond A. Hill IV, M.S. (*Lieutenant, U.S. Navy*); Michael Humara, B.S. (*Lieutenant, U.S. Navy*); Lou Alvarez, B.S. (*Lieutenant, U.S. Navy*)

The Department of Naval Science provides professional training for undergraduate students (midshipmen) leading to a commission, upon graduation, in the United States Navy or the United States Marine Corps. Through the Naval Reserve Officers Training Corps Program (NROTC), scholarship students receive full tuition, fees, book stipend and \$250–\$400 per month subsistence allowance. The university also provides an additional automatic scholarship of \$4,000 per year for each NROTC scholarship recipient. Non-scholarship students may apply to participate as members of the midshipman battalion with limited financial assistance, earning a commission upon completion of the baccalaureate degree. Because of the rapid development of highly technical ship systems, aviation and other military equipment, the majority of Navy scholarships are awarded to science and engineering majors; however, limited Navy scholarships and all Marine Corps

scholarships are currently available to students pursuing any major offered by the university, as long as they complete basic technical requirements. In addition to university requirements, midshipmen must complete 15–22 units of naval science courses, a physical fitness test and three active duty summer training sessions, each about three to six weeks long.

All naval science courses are open to students who are not in the program but have an interest in the Navy and Marine Corps related fields, such as engineering, navigation, amphibious warfare, naval operations, history and leadership/management.

Program Requirements

Scholarship Program

The majority of naval science students attend the university on Navy or Marine Corps scholarships. Scholarships are awarded primarily on a four-year basis to high school seniors selected in nationwide competition. Two- and three-year scholarship programs are also available with a similar selection process. In addition to tuition and fees, books and uniforms, students receive subsistence allowance of \$250–\$400 per month. Navy Option midshipmen later will be required upon graduation to serve a minimum of five years of active military service. Additional requirements may be required for specific job assignments. The NROTC program only commissions Naval officers into the following communities: Aviation (pilot or naval flight officer), Submarine Warfare, Surface Warfare, Special Operations (Explosive Ordnance Disposal), Special Warfare (SEALs) or Medical/Dental Corps.

College Program

Students may join NROTC as non-scholarship “College Program” students. These students receive uniforms and participate as regular midshipmen in the program

but do not receive scholarship or stipend funds or attend summer training. College Program students must complete and be selected for a two- or three-year scholarship or be placed in an “Advanced Standing” status in order to continue in the program and receive an active duty commission.

Marine Corps Option

The Marine Corps option prepares midshipmen for service as second lieutenants in the United States Marine Corps. Marine Option Midshipmen must successfully complete Officer Candidate School (OCS) in order to earn their commission. This intensive 6-week course is completed during their final summer training session. Marine Corps Option students also participate, on a limited basis, in local field training exercises during the academic year. Marine Corps Option midshipmen will be required upon graduation to serve at least four years on active duty.

Requirements for Commissioning

Students must meet USC degree requirements in their chosen fields and complete the prescribed naval science courses and Professional Laboratory (PROLAB). In addition, Navy scholarship students must include in their programs MATH 125 Calculus I and MATH 126 Calculus II and PHYS 151L Fundamentals of Physics I: Mechanics and Thermodynamics and PHYS 152L Fundamentals of Physics II: Electricity and Magnetism; two courses of English, one course in American history/national security policy and one course in language or culture.

More detailed program information and the online application process is available at: nrotc.navy.mil/index.aspx. The USC NROTC Website is usc.edu/dept/nrotc.

Graduate Degrees

Admission

Applicants for admission to the Master of Health Administration; Executive Master of Health Administration; Executive Master of Leadership; Master of Planning; Master of Planning and Development Studies; Master of Public Administration; Master of Public Policy; Master of Public Policy and Management; Master of Real Estate Development; Doctor of Policy, Planning, and Development; Doctor of Philosophy in Public Policy and Management; and Doctor of Philosophy in Urban Planning and Development must have a bachelor's degree or its equivalent from an accredited educational institution. In recognition of the increasing diversity of capabilities required as the theories and practices of policy, planning, and development evolve, students from a variety of undergraduate and graduate backgrounds are encouraged to apply.

Applicants for admission will be expected to have completed a broad range of undergraduate courses in addition to their academic major or professional concentration. Generally, this will be reflected in completion of courses from the following fields: English;

economics (basic theory); political science, history or sociology; physical or natural science; art or philosophy. In addition, mathematics (algebra, calculus, probability theory) and a course in statistics are strongly recommended.

Application for Admission

Admission to graduate programs in the Price School of Public Policy is highly selective and competitive. Preference is given to those with a record of high educational achievement and personal qualities favoring success in the fields of planning or development. Applicants must have achieved superior grades during undergraduate and any graduate education. A grade point average of at least 3.0 (A = 4.0) is normally expected as well as satisfactory scores on the Graduate Record Examinations (GRE). The GRE and GMAT are neither accepted nor required for the DPPD or executive MHA programs. Students applying for admission to the Master of Planning, Master of Planning and Development Studies or the Master of Real Estate Development program may also submit either the Graduate Management Administration

Test (GMAT) or the Law School Admission Test (LSAT). In exceptional cases, an applicant who has not met these scholarship requirements may be admitted with conditions of admission.

For specific information on admission requirements and application procedures, contact the Price School of Public Policy, Office of Recruitment and Admissions, at (213) 740-0550. Certificate in Transportation Systems applicants should apply to the USC Viterbi School of Engineering. For additional information, contact the school at (213) 740-0587.

Transfer Credit

The Degree Progress Department determines whether work done elsewhere is available for consideration for credit toward the USC degree. That office requires official transcripts of all course work done before entering USC. A Graduate Transfer Credit Statement of these official transcripts, done after a student has been admitted to regular status at USC, will indicate which units are available for transfer. These courses do not apply toward the degree unless, and until, the student's major

department approves and submits transfer credit to the Degree Progress Department in the Office of Academic Records and Registrar.

Application of any available transfer credits toward a graduate degree will be determined by the director of the particular degree program, based on the semester units available for transfer as shown on the Transfer Credit Statement.

These general guidelines are followed by the admissions evaluator and by faculty members: (1) the work must be completed at an accredited graduate school; (2) the grade must be B or better; (3) the work must be a fair and reasonable equivalent to current USC course work at the graduate level which fits into the logical program for the degree; (4) the units are not more than seven years old at the time of admission to their master's program (or 10 years old for a doctoral program); (5) the units must reflect current knowledge in the field; and (6) the work must be completed prior to admission to the USC program.

USC does not give transfer credit for life experience, credit by examination, noncredit extension courses or thesis course supervision.

Please consult with your degree director before enrolling in courses outside of USC. In many of the Price School's master's degree programs, only courses taken outside of USC prior to admission may be applied to your degree.

Waiver of Course Content

The school recognizes that some applicants may have covered the material contained in core courses or courses required for a particular specialization. Under these circumstances, one particular course requirement may be waived, allowing the student to complete a more advanced course in the same area. Students who have a background in a particular area of study may be allowed to substitute other courses. In these situations students do not receive unit credit but are permitted to take course work, which does not repeat earlier academic experiences.

Waiver of content is usually given only in the case of previous academic study of the subject, not in the case of experiential background in the area.

Students who believe they are eligible for content waiver decisions must petition the faculty of the school, providing evidence of the previous work through transcripts, syllabi and other pertinent material. Contact the school's Student Affairs Office for information.

Master of Health Administration

The issues surrounding the delivery and financing of health services have an enormous impact on individuals and the communities in which we live. The health care industry now accounts for more than 15 percent of the U.S. economy. Fast-moving developments in technology, economics, ethics, finance, policy, management and globalization are driving changes in the health sector. Effective health leadership requires an understanding of governance systems and the complex interplay between the public, private and nonprofit sectors as well as the dual imperatives of both the clinical and business facets of health care delivery. As the health care system changes, career opportunities abound. The field has a tremendous need for leaders, managers and

analysts — in hospitals, health plans, physician practices, health-related enterprises, community health organizations, social advocacy groups, and regulatory and legislative agencies.

The Price School of Public Policy's multidisciplinary nature, with degree programs in public policy, public administration, urban planning, and international policy, adds breadth that distinguishes USC's MHA degree, providing students with an understanding of the larger social context in which the health sector is embedded and how it intersects and interacts with other social policy issues.

The Price School programs in health management and policy offer two degree options — the Master of Health Administration and the Executive Master of Health Administration. These degrees position the student to acquire the knowledge, skills and applied experience to shape health policy and lead health organizations. Requirements for the Executive MHA differ from those of the traditional MHA and are found on page 881xx.

The Master of Health Administration builds a solid foundation emphasizing managerial, analytical and public policy skills for those entering the health field, while the Executive Master of Health Administration deepens professional skills and permits those already working in the health field to advance to higher levels of leadership.

The MHA curriculum incorporates five major areas of competence: management/operations/leadership; health policy analysis; health finance; health information technology; and, health care quality. Each student will be exposed to these core areas and will specialize in two of them. The program prepares students for management positions in hospitals; managed care systems; physician groups; ambulatory care systems, government agencies concerned with health care policy, planning, quality assurance and regulation; and private firms involved in health care consulting, finance, performance assessment and evaluation.

Requirements for Admission

General

Applicants must have a bachelor's degree from an accredited college or university. Applicants may take courses on limited standing pending formal admission to the master's degree program.

Applicants with bachelor's degrees must have a minimum grade point average of 3.0 in their undergraduate course work and a score of at least 500 on the verbal and at least 500 on the quantitative sections of the GRE. Deviations from these minimums will be allowed when justified by exceptional work experience, letters of recommendation or improvement in academic performance during the third and fourth years of undergraduate study.

Prerequisites

Statistics

A basic competence in descriptive and inferential statistics is also required for the MHA program. The statistics prerequisite must be satisfied within the first 12 units or before enrolling in PPD 557 Modeling and Operations Research. This prerequisite may be met in one of two ways: (1) entering students must have passed an undergraduate inferential statistics class, with a grade of "B" or better, at an approved university within three years

of matriculation, or (2) completing PPD 502x Statistical Foundations for Public Management and Policy with a grade of "B" or better (this course credit may not count toward the MHA degree).

Limited Status Students (Preadmission)

Students taking courses who have not been admitted to the school are designated limited status students. These students may be waiting for part of their application package materials to arrive; or they may be investigating whether an MHA may be right for them.

To be considered for limited status reenrollment, interested students need to complete the Price School of Public Policy Limited Student Application for Enrollment form and submit official or unofficial copies of their transcripts from their bachelor's degree granting institution. Students with a 3.0 grade point average (A = 4.0) may enroll in up to 8 units of graduate courses in the Price School of Public Policy.

Price School of Public Policy Limited Student Application for Enrollment forms may be obtained from the Admissions Office, USC Price School of Public Policy, University of Southern California, RGL 111, Los Angeles, CA 90089-0626, telephone (213) 740-6842. Limited students may only enroll during the in-person registration period (the week before classes begin).

Limited status students may apply only 8 units of appropriate graduate work toward the MHA after admission. Units beyond these first 8 must be petitioned for through the school. Students on limited status are encouraged to complete the application and admission process before completing those first 8 units.

Certificate Program

Information regarding the Certificate Program in Health Management and Policy Programs can be found on page 892xx.

Curriculum

Curriculum for the MHA includes 48 units (40 required units and 8 elective units). In addition, a supervised field placement (residency) in a health service organization is required. The MHA degree is designed to be completed in two years of full-time study, but can be extended for those who work while going to school. Evening classes and classes that meet in an intensive, workshop format of two to four sequential days of training are designed to accommodate working professionals.

REQUIRED CORE (40 UNITS)		UNITS
PPD 500	Intersectoral Leadership	2
PPD 501a	Economics for Policy, Planning and Development	2
PPD 509	Problems and Issues in the Health Field	4
PPD 510a	Financial Management of Health Services	4
PPD 511	Health Information Systems	2
PPD 513	Legal Issues in Health Care Delivery	2
PPD 514	Economic Concepts Applied to Health	4
PPD 515	Strategic Management of Health Organizations	4
PPD 516	Financial Accounting for Health Care Organizations	4

PPD 517	Concepts and Practices in Managing Health Care Organizations	2
PPD 518	Quality of Care Concepts	2
PPD 545	Human Behavior in Public Organizations	4
PPD 557	Modeling and Operations Research	4

Electives

In addition to the 40 required units, students are required to take 8 units of electives. Elective courses will be taken in two of the five specialization areas: management/operations/leadership; health policy analysis; health finance; health information technology; and health care quality. The two specializations will be selected by the student with the advice and written consent of the MHA program director and faculty adviser.

Residency

The MHA student is required to complete a 1,000 hour residency at a health care organization, generally during the second year of study. This residency may be reduced, but must include at least 500 hours, depending on the health care experience of the student. The residency is designed to provide the student with practical administrative experience that complements program course work.

Executive Master of Health Administration

The Executive MHA Program offers clinical and management professionals an opportunity to advance their careers in health care and to more effectively improve health services within their communities. Mid- to senior-level professionals who have the ambition and potential to serve as industry leaders in the highly dynamic and competitive health care environment are encouraged to consider the Executive MHA degree. The Executive MHA is geared to those who have demonstrated capabilities, yet who will benefit from expanded skills and competencies that will enable them to lead.

Participants sharpen their business acumen by gaining exposure to and in-depth knowledge of the latest theories and the best in contemporary health management practice. A practical, problem-solving approach ensures that skills can immediately be applied on the job.

Requirements for Admission

Applicants for the Executive Master of Health Administration apply directly to the program. A minimum of five years of experience with progressively greater levels of responsibility in health care or a related field is required for entry into the Executive MHA program. Applicants must have earned a bachelor's degree from an accredited college or university. A minimum grade point average of 3.0 in undergraduate course work is required. Allowances may be made when justified by exceptional work experience and letters of recommendation.

Prerequisites

Accounting

A basic competence in accounting is required for the Executive MHA program. The accounting prerequisite

must be satisfied before enrolling in HMG 565 Managing the Organization's Financial Health. This prerequisite may be met in one of three ways: (1) completing the non-credit Executive MHA accounting workshop with a passing score; (2) demonstrating prior work experience or (3) completing prior course work at an accredited academic institution in accounting and finance.

Curriculum

The Executive MHA offers a hybrid online/in-residence executive education program that will prepare the graduate to meet career objectives. The program provides students with the flexibility to meet program requirements while maintaining full-time administrative positions, but also emphasizes the importance of an integrated approach to executive education. In addition to the synchronous and asynchronous learning modules included in each course, students will participate in five-day, in-residence sessions at the University Park Campus twice during the program. The first in-residence session will occur before the midpoint of the program, and the second session will be a capstone experience in the last semester of the program. The Executive MHA degree program does not require a supervised field placement (residency) in a health care organization.

The curriculum of the EMHA is organized around five themes: thriving in transformational times through innovative leadership; delivering cost-effective care in an era of value-based purchasing; providing efficient management and administration; developing and implementing strategies to enhance patient safety and quality of care; and demonstrating organizational and clinical effectiveness through health information technology. These integrated themes and the associated content provide graduates with a comprehensive approach that expands their understanding of the key principles and applications necessary to function in a senior administrative leadership role.

REQUIRED COURSES (36 UNITS)		UNITS
HMG 520	Leading People and Health Care Organizations	4
HMG 540	Health Economics, Financing and Reimbursement	2
HMG 565	Managing the Organization's Financial Health	4
HMG 570	Strategic Management	4
HMG 575	Managing and Improving Health	4
HMG 600	Managing Risk	2
HMG 601	Operations Management for Accountability	4
HMG 602	Operational Efficiency Processes in Health Care Organizations	2
HMG 603	Developing and Monitoring of Quality and Patient Safety Outcomes	2
PPD 511	Health Information Systems	2
PPD 518	Quality of Care Concepts	2
PPD 521a	Information Technology Management Systems in Health Care	2
PPD 605	Frontline Issues in Health Services Administration and Policy	2

Participants in the executive program gain practical skills. Emphasis is given to executive decision-making; development of sound planning, analytical and leadership capabilities; and strong interpersonal communication. More specifically, Executive MHA graduates will achieve advanced competency in disciplines which include economics and finance, health care regulation, business development, operations, strategic analysis and management, organizational design, quality and outcomes assessment, and information management. Our graduates will model effective leadership and management in a rapidly evolving health care environment.

The core faculty is drawn from the USC Price School of Public Policy and includes senior, experienced faculty, along with nationally renowned academic specialists and health care experts. The opportunity to interact with health care's leading thinkers, policymakers and practitioners is an essential component of the Executive MHA program.

The Executive MHA office is located in Ralph and Goldy Lewis Hall, Room 307, Price School of Public Policy, (213) 740-2984, email emha@usc.edu.

Master of Science in Health Systems Management Engineering

This program is jointly sponsored by the Epstein Industrial and Systems Engineering Department and the Price School of Public Policy, and administered by the Epstein Industrial and Systems Engineering Department. This degree is designed for students with sufficiently quantitative bachelor's degrees in engineering, the sciences or applied social science who are interested in operations management and health care applications, and whose career objectives lead to increasing technical management responsibilities in large health care organizations, particularly hospitals. Students with less quantitative social science or other non-technical backgrounds interested in health administration objectives may also want to consider the Master of Health Administration program in the Price School of Public Policy. For degree requirements, see Industrial and Systems Engineering, page 665xx.

Executive Master of Leadership

The Executive Master of Leadership Program offers professionals from a variety of fields including public administration, public policy, planning, law enforcement, transportation and other public, nonprofit and business organizations, with at least five years of professional experience, the opportunity to build leadership skills at five levels: individual, team, organizational, community and institutional. The program design offers participants insight into the mechanisms that facilitate effective personal and organizational networks, as well as collaborative problem-solving strategies and practices.

The program follows a cohort model for the four required core courses. The degree curriculum has three distinguishing features: a design to connect ethics with leading through core values; an interdisciplinary and multidisciplinary problem-solving approach; and transformational leadership that connects the public, private and nonprofit sectors.

Requirements for Admission

Applicants for the Executive Master of Leadership apply directly to the program. A minimum of five years of experience with progressively greater levels of responsibility is required for entry into the program.

Candidates for admission must have earned a bachelor's degree from an accredited college or university with a minimum 3.0 grade point average. Exceptions to the minimum GPA requirement may be made when justified by exceptional work experience and letters of recommendation.

Applicants must submit a standard USC graduate application and fee along with official transcripts from all undergraduate and graduate institutions attended. Letters of recommendation, a current resume, an essay and an interview will also be required.

Degree Requirements

Students are required to complete 28 units of graduate work — 16 units of required core courses and 12 units of electives.

REQUIRED CORE COURSES (16 UNITS)		UNITS
PPD 640	Leadership Foundations: Competencies and Core Values	4
PPD 641	Leading Individuals, Groups and Teams	4
PPD 642	Strategic Leadership of Organizations	4
PPD 643	Leading Transformations Across Sectors: Integrative Seminar	4

Electives

In addition to these 16 required units, students are required to take 12 units of electives.

Elective courses will be selected in consultation with the faculty adviser based on the student's individual learning/development plan. Students will choose these electives in order to concentrate in a particular area of study. The following are examples of concentrations that are available: public management, nonprofit policy and management, urban planning, transportation, public policy and political management. The Price School of Public Policy offers a wide range of electives to students each semester.

Master of Planning

The planning of cities is as old as urban civilization. The contemporary planning profession has expanded to include a broad range of applications that draws upon emphases of foresight, common good and interconnections of elements in human settlements. Planners are engaged in evaluating and guiding community and urban development at geographic scales, ranging from the local American neighborhood to the global village utilizing the public, private and nonprofit sectors.

Planners play an increasingly important role in managing the pressing problems and competing demands of change and growth in shaping a better future. The Master of Planning (MPI) curriculum reflects this forward-looking and constantly evolving role.

The MPI curriculum provides a core of knowledge underlying the key forms and applications of planning. This

core sets the foundation for a wide choice of specific careers in the field and extends the relevance and value of graduate education over an extended period of time. A goal of the MPI curriculum is to prepare planners to practice anywhere in the world.

The Planning Accreditation Board of the American Planning Association and the Association of Collegiate Schools of Planning accredit the MPI program.

All persons pursuing the MPI will complete core courses which present basic theories, techniques and methods.

Concentrations are available in five broad areas: economic development; preservation and design of the built environment; social and community planning; sustainable land use planning; and transportation and infrastructure planning. After students register, the faculty will suggest specializations that allow students to focus their concentrations even further or span planning more broadly.

A concentration in any of these areas qualifies graduates for a wide range of private, public and nonprofit sector careers with government agencies, consulting firms, corporations, utilities, international technical assistance programs, nonprofit and special interest organizations and joint public-private ventures.

Curriculum Requirements

The program of study for this professional graduate degree requires completion of 48 units, including 16 units of core curriculum, 8 units of planning studios, 4 units of methodology related to the student's concentration, a required concentration gateway course and 16 units of electives, including two additional courses related to a student's concentration. A comprehensive examination and an approved non-credit internship are also required. The degree may be pursued on either a full-time or part-time basis.

Statistics Prerequisite

A basic competence in descriptive and inferential statistics is required. This prerequisite may be fulfilled by successfully completing PPD 525 or by having completed a previous course (within five years) with a grade of B or higher (A = 4.0).

CORE CURRICULUM (EIGHT

LECTURE-SEMINAR COURSES:		UNITS
PPD 500	Intersectoral Leadership	2
PPD 501a	Economics for Policy, Planning and Development	2
PPD 524	Planning Theory	2
PPD 525	Statistics and Arguing from Data	2
PPD 526	Comparative International Development	2
PPD 527	The Social Context of Planning	2
PPD 529	Legal Environment of Planning	2
PPD 533	Planning History and Urban Form	2
		16

Note: 2-unit courses may be offered in seven-and-a-half week blocks.

Planning Studios

Planning studios are an integral part of the curriculum of the Price School of Public Policy, providing the

essential educational link between academic education and preparation for professional practice. The planning studios require that students learn to work together as a team by applying their respective capabilities and knowledge to a real-world common problem and to produce a professional project. Students must complete 8 units of domestic or international planning studios under PPD 531L (4) to satisfy this requirement. A maximum of 12 units may be taken.

Local agencies, communities and firms often sponsor planning studios to obtain research and analysis. Community groups seek assistance as a means of informing themselves more thoroughly on community problems and issues or for obtaining planning analysis otherwise unavailable to them. The products of planning studios are usually in the form of policy recommendations, a suggested plan or alternative plans, databases, background information, base maps, or any one of many specific contributions.

MPI planning studios can either be situated in the United States or around the world. Past courses have examined the tragedy around Katrina in New Orleans, developed economic development plans for local Southern California cities, and studied changing public spaces in Germany.

Price International Laboratories (PPD 613ab) can be taken as an elective in the MPI program. The program strongly encourages students to enroll in one laboratory during their course of study. In recent years, Price lab courses have been offered in China, Brazil and England.

Concentrations (16 units)

Students must declare their concentration during the fall semester prior to taking the comprehensive examination in the spring semester. Students are required to complete the gateway course and methodology course related to their concentration as part of their preparation for their comprehensive examination. The student's concentration must contain a 4-unit methodology course, a 4-unit gateway course and 8 other units. At least 12 of these units must be selected from Price School curriculum. Courses outside the Price School should be selected by the student with the approval of an academic adviser and must be directly concerned with the subject matter of the concentration.

After students register, the faculty will provide them with a series of specializations they may take in association with the concentrations. These specializations are not required; they are provided as guidance for students interested in these subject areas. The specializations vary. Some suggest ways that students can more deeply study a single area within planning, while others provide a broad overview of planning and policy issues. The specializations draw upon courses within the MPI program, the Price School sister programs and courses from other USC units.

Economic Development is the basis for prosperous community development. Job creation and the development of service or employment sites are the core of economic development. At a higher geographical scale, development of regional economies provides a focus for planning in an international context. Suggested courses for students selecting this concentration include PPD 622, PPD 624, PPD 625, PPD 626, RED 509 and RED 542.

Preservation and Design of the Built Environment

addresses the architecture of the city, viewed not as a series of individual buildings, but as a set of visual and functional connections between buildings on a street front or in a district. In contemporary settings, planning and construction do not begin with a blank slate. Rather, new structures are inserted into an existing built environment, which must be respected for its historical heritage and its contributions to the new. Students in this concentration are encouraged to draw from courses related to landscape architecture and historic preservation in the School of Architecture. Suggested courses for students selecting this concentration include PPD 530, PPD 615, PPD 618, PPD 619, PPD 623, PPD 631 and PPD 692.

Social and Community Planning gives specific attention to the changing needs of neighborhood residents and to the ways in which different planning policies, programs and activities contribute to resident well-being. Community planning is a process of organizational change that links residents and services to produce communities that are safe, healthy and socially connected. Achieving these goals demands that residents actively advocate for their communities. Suggested courses for students selecting this concentration include PPD 606, PPD 617, PPD 618, PPD 619, PPD 620, PPD 621, PPD 686 and PPD 690.

Sustainable Land Use Planning centers on community land use planning set in the context of regional growth or decline. The planning process involves forecasting transportation means, population growth and housing needs, together with providing comprehensive planning to accommodate that growth in a way that preserves and enhances local quality of life. Envisioning better futures, livability, environmental protection accessibility, mobility and affordable housing production are all part of smart growth strategies for sustainable regional growth. Suggested courses for students selecting this concentration include PLUS 611, PPD 615, PPD 618, PPD 620, PPD 621, PPD 627, PPD 631, PPD 692 and PPD 694.

Transportation and Infrastructure Planning is the combination of vital functions that determine the efficiency and productivity of a city. Issues of access and mobility of urban residents must be addressed. Circulation of workers from home to workplace, and of residents to shopping and services, are fundamental determinants of land use and urban form. Students in this concentration acquire mastery of the basics of transportation analysis, with emphasis on analysis of different policies that serve transportation and infrastructure needs within urban areas. Suggested courses for students selecting this concentration include PPD 557, PPD 588, PPD 589, PPD 621, PPD 630, PPD 631, PPD 635 and PPD 692.

Concentration Gateway Courses

Students are required to complete their gateway course prior to participating in the comprehensive examination. The following courses are required for their concentration:

Economic Development: PPD 639 Introduction to Community and Economic Development

Preservation and Design of the Built Environment:

PPD 644 Shaping the Built Environment

Social and Community Planning: PPD 628 Urban Planning and Social Policy

Sustainable Land Use Planning: PPD 619 Smart Growth and Urban Sprawl: Policy Debates and Planning Solutions

Transportation and Infrastructure Planning: PPD 634 Institutional and Policy Issues in Transportation

Concentration Methodology Courses

Students are required to complete one methodology course related to their concentration. Students are encouraged to complete a second methodology course among their electives. The following courses are required for their concentration:

Economic Development: PPD 625 Planning and Economic Development Finance

Preservation and Design of the Built Environment: PPD 627 Design Skills for Urban Planners

Social and Community Planning: PPD 616 Participatory Methods in Planning and Policy

Sustainable Land Use Planning: PPD 617 Urban Demography and Growth

Transportation and Infrastructure Planning: PPD 633 Urban Transportation Planning and Management

Comprehensive Examination

Successful completion of a comprehensive examination is required of each student seeking the Master of Planning degree (except for students pursuing the dual degree with either economics or gerontology). Students pursuing the dual degree with real estate development can choose the MPL or MRED examination. The comprehensive examination integrates accumulated lessons of the core courses and planning studios. Students are also expected to utilize material covered in their concentration and electives.

The comprehensive examination is given only in the spring semester of each year. Students usually take the examination in the last semester of their second year. Students must declare their concentration during the fall semester prior to completing the comprehensive examination in the spring semester. They must have completed the gateway and methodology courses in the declared concentration prior to taking the comprehensive examination.

The MPL Program degree committee administers the comprehensive examination. Examinations are graded on a pass/fail basis. Students who fail the examination may take it a second time the next year. The examination may only be repeated once.

Planning Electives

Students are encouraged to select electives related to their course of study. A Price international laboratory course is especially encouraged.

Internship

Students working toward the Master of Planning degree must complete an internship of at least 10 weeks duration and 400 hours in an organization engaged in planning or a closely related activity. Students must submit a report to the director of career services describing and evaluating the internship experience. Arrangements must also be made for an evaluative report of the internship by the student's supervisor submitted directly to the academic adviser. The internship is not for unit credit.

Students often fulfill their internship while working part-time in a planning-related job during their course of study in the program or in the summer between the two academic years. If a student has had equivalent career experience prior to admission to the program, the MPL director may waive the internship requirement on the recommendation of the student's academic adviser.

The Price Office of Career Services actively works with school alumni and area planning organizations to assist students in obtaining appropriate internships. Numerous internship opportunities are available in the greater Los Angeles area. The student is responsible for securing the internship and fulfilling the requirement.

Directed Research

With the advice of the faculty, a student may elect to enroll in directed research as an elective. Working directly with a faculty member, the student pursues an interest or problem appropriate to the student's program of study.

The faculty member supervising the student must approve the final product of directed research. The final product may be a written report, article, graphic formulation, physical model, mathematical-statistical analysis, computer output or film — depending on the most appropriate expression of the research undertaken.

General Requirements**Residence and Course Load**

The Master of Planning normally requires two academic years of full-time study. Courses are also scheduled to allow completion on a part-time basis.

At least 36 units of graduate-level study must be done in residence at USC. The residency requirement may not be interrupted without prior permission from the Price School of Public Policy. Students accepted into the program with academic deficiencies will require a correspondingly longer time to complete their course work. Students seeking the degree on a part-time basis must take at least one course each semester.

Students must be enrolled at USC for the fall and spring semesters each year until all degree requirements have been met. Students who find it necessary to be excused from a semester of registration must request a leave of absence from the Academic Programs Office by the last day to drop/add courses of the semester in question; such leaves may be granted for up to one year. For additional information refer to USC policies governing continuous enrollment, readmission, and leaves of absence in the Academic Policies section of this catalogue.

Time Limits

All requirements for the Master of Planning must be completed within five calendar years from the beginning

of the semester in which the student was admitted to the program. University regulations prohibit the acceptance of credits for courses taken toward the Master of Planning degree more than seven years after the date they were successfully completed.

Grade Point Average Requirement

While enrolled in the program a student must maintain a grade point average of at least a 3.0 for all courses taken toward the degree.

Probation and Disqualification

Any student with a cumulative grade point average below 3.0 for all courses taken in the program will be placed on academic probation. A student whose semester grade point average is below 3.0, but whose cumulative grade point average is 3.0 or higher, will be placed on academic warning.

A student may be disqualified to continue toward a graduate degree if the student has been on academic probation for two consecutive semesters. Whether or not on academic probation or warning, a student may be disqualified at any time from continuing in the program if the dean of the school, after consultation with the faculty, determines that the student is deficient in academic achievement or in another qualification required for the attainment of the Master of Planning degree.

Course Exemptions and Transfer of Credits

Graduate work by transfer may be accepted from approved graduate schools as determined by the USC Articulation Office upon recommendation of the dean of the school. Not more than 12 units of graduate work, with grades of B or better may be transferred for credit to the Master of Planning degree.

The following courses, or their equivalents, cannot normally be transferred for unit credit from other institutions: PPD 500, PPD 501a, PPD 524, PPD 525, PPD 526, PPD 527, PPD 529, PPD 531L, PPD 533, PPD 590, PPD 594ab. Undergraduate work will not be credited for advanced or graduate standing. Students may petition to receive subject credit for these courses; but unit requirements must be met through the completion of additional electives.

Some applicants for admission to the school have been engaged in work in planning, development or closely related activities. Although this experience may have been beneficial to the students involved and may satisfy the internship requirement, it may not be considered equivalent to academic education.

Master of Planning and Development Studies

The Master of Planning and Development Studies degree is designed for mid-career professionals in planning, development or related disciplines who desire to update and/or redirect their professional skills and careers. The program is very flexible, allowing students to pursue areas of expertise that they find valuable in their present or future careers. Entering students must have a minimum of five years of planning, development or related professional work experience.

Curriculum Requirements

The Master of Planning and Development Studies program requires completion of 28 units. Basic degree requirements consist of two core courses; 16 units in a concentration area approved by an adviser; and an integrative seminar course during which the student completes a written and oral comprehensive examination.

REQUIRED COURSES		UNITS
PPD 611	Policy Issues in Planning and Development	4
PPD 612	Research and Analytical Techniques	4
PPD 638	Integrative Seminar (normally in the last semester in conjunction with the comprehensive examination)	4

Concentration Area(s)

Students elect a concentration area from one of three already defined or, with prior approval by an adviser, design a concentration from Price School of Public Policy courses and USC graduate courses. A minimum of eight units must be Price School of Public Policy courses. The three defined concentration areas are:

Community Economic Development Select 16 units from the following courses: PPD 618 (4), PPD 623 (4), PPD 624 (4), PPD 625 (4), PPD 626 (4), PPD 629 (4), PPD 631 (2); RED 509 (4), RED 542 (3), RED 546 (3)

Environmental Policy and Planning Select 16 units from the following courses: PLUS 600 (4), PLUS 633 (4), PPD 531L (4), PPD 617 (4), PPD 619 (4), PPD 620 (4), PPD 621 (4), PPD 622 (4), PPD 631 (2), PPD 634 (4), PPD 712 (4)

International Planning and Development Select 16 units from the following courses: PLUS 631 (4), PLUS 632 (4), PLUS 633 (4), PLUS 635 (4), PLUS 640 (4); PPD 626 (4); RED 583 (2), RED 585 (4)

Integrative Seminar and Comprehensive Examination

Successful completion of a comprehensive examination is required of all students seeking the Master of Planning and Development Studies degree. The integrative seminar course (PPD 638) and comprehensive exam should be taken during the semester of intended graduation. During the seminar class, students identify a practice-oriented problem covering the core courses and concentration area, which ideally is sponsored by a planning and/or development office or firm. The student will: (1) prepare a professional-quality document; (2) present the solution to a faculty committee with invited sponsor guests; and (3) have an oral defense. Students who fail the examination may take it again within one year, but it may only be repeated once.

General Requirements

Residence and Course Load

The Master of Planning and Development Studies may be completed in one academic year of 12 units in the fall and spring semesters and the four-unit integrative seminar/comprehensive examination the following summer semester.

At least 18 units of graduate study must be done in residence at the University Park Campus, the USC State Capital Center or at an approved off-campus study center.

Time Limit

Students in the program must complete all requirements for the Master of Planning and Development Studies within five calendar years from the beginning of the semester in which the student was admitted to the program.

Grade Point Average Requirement

While enrolled in the program, a student must maintain a grade point average of at least 3.0 (A = 4.0) for all courses taken toward the degree.

Probation and Disqualification

Any student with a cumulative grade point average below 3.0 for all courses taken in the program will be placed on academic probation. A student whose semester grade point average is below 3.0, but whose cumulative grade point average is 3.0 or higher, will be placed on warning.

A student may be disqualified to continue toward a graduate degree if the student has been on academic probation for two consecutive semesters. Whether or not on academic probation or warning, a student may be disqualified at any time from continuing in the program if the dean of the school, after consultation with the faculty, determines the student is deficient in any degree requirement.

Course Exemption and Transfer of Credits

Credit for graduate work may be transferred from approved graduate schools as determined by the USC Degree Progress Department in the Office of Academic Records and Register on recommendation of the dean of the school. Not more than four units of graduate work, with grades of B or better, can be transferred for credit toward the Master of Planning and Development Studies degree.

The following courses, or their equivalents, may not normally be transferred for unit credit from other institutions: PPD 611, PPD 612 and PPD 638. Undergraduate work may not be transferred into the degree program for unit credit.

Some applicants for admission to the school will have been engaged in work in planning, development or closely related activities. Although this experience should be beneficial to the students involved, it may not be considered equivalent to academic education.

Master of Public Administration

Admission

The Master of Public Administration programs are under the jurisdiction of the Price School of Public Policy. All admissions decisions are made by the school, following guidelines set by the university. See the Admission section of this catalogue.

All questions about the programs and all materials required for admission should be submitted to: MPA Programs, Admissions Office, RGL 111, University Park, University of Southern California, Los Angeles, CA 90089-0626.

Admission to each of these programs is determined by the faculty and admissions committees connected with those areas. Application packages should be sent directly to the program office.

Applications

The admission decision is made using criteria which include verification that the applicant has completed a bachelor's degree from an accredited college, has maintained a B average in undergraduate course work and has earned an acceptable score on the verbal and quantitative portions of the Graduate Record Examinations (GRE) or the Graduate Management Admissions Test (GMAT). Other elements of the applicant's educational and experiential background are also evaluated. International students whose native language is not English must also submit a Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) score.

Each candidate should submit the following to the school: (1) official transcripts of all previous college and university work, showing an awarded degree where appropriate; (2) copies of GRE or GMAT scores; (3) an essay answering questions on the admission questionnaire provided by the school; (4) an up-to-date resume which includes academic and professional accomplishments; (5) three or more letters of evaluation from previous instructors and from professional associates who can attest to the applicant's potential; (6) completed USC Graduate Admission Application, along with the nonrefundable processing fee; and (7) completed Price School of Public Policy Supplemental Graduate Application.

International applicants may be asked to supply additional information. See the Graduate Admission section of this catalogue.

Deadlines

Applications for admission are evaluated monthly. Those students who are also applying for financial aid, or who must meet other deadlines for admission, should submit application materials early enough to allow the admissions decision to be made in advance of those other deadlines.

The admissions process generally takes about four to six weeks after all necessary materials have been submitted.

Pre-Service/In-Service Designation

Most MPA students are classified as pre-service or in-service students at the time of admission. Pre-service students are those who enter the program with less than two years of professional work experience. In addition to course work, pre-service students complete an internship. Students pursuing the Intergovernmental Management specialization or one of the dual degree programs are not classified as pre-service or in-service. Appeals for reclassification of this designation must be submitted during the first semester of enrollment.

Prerequisites

Social Science

Any undergraduate major is acceptable as preprofessional background, provided the applicant has had at least 12 semester units (16 quarter units) of undergraduate course work in cultural anthropology, economics,

ethnic studies, social and human geography, political science, sociology or related social science area courses; no more than two of these courses may be in the same field.

Deficiencies in the social science prerequisite may be met while in residence by taking appropriate courses in other departments, but such course work may not be counted toward the course requirements for the master's degree.

Statistics

A basic competence in descriptive and inferential statistics is also required for the MPA programs. This prerequisite may be met in one of two ways:

1. Entering students must have passed an undergraduate inferential statistics class, with a grade of "B" or better, at an approved university within three years of matriculation.

2. If students do not satisfy this prerequisite, they will be required to take PPD 502x Statistical Foundation for Public Management and Policy, a two-unit graduate level inferential statistics course. They must complete the course with a grade of "B" or better. The units associated with this class may not be used toward the MPA degree.

All prerequisites must be fulfilled within the first 12 units of graduate course work. The statistics prerequisite must also be met before enrolling in PPD 542, PPD 557, PPD 638 or PPD 666.

International Students

Students applying for graduate programs should send applications and appropriate documents to the MPA Programs Admissions Office, which processes all such applications.

Admission

A student is accepted for admission only for the semester indicated on the letter of admission. If the student desires to enter at another time, or if the student cannot arrive on campus in time for the semester in which he or she was admitted, the student must contact the MPA Programs Admissions Office in writing. That office will contact the Office of International Admissions.

Students who do not enroll for the semester indicated on the letter of admission cannot be guaranteed admission to a later session. They will need to work with the MPA Programs Admissions Office to determine procedures to follow.

Registration Requirements

International students on student visas must be registered as full-time students as arranged by the Office of International Services. Doctoral students must carry a load of at least 6 units to be considered full-time students. A full-time graduate load is eight units. Such students are not eligible to be considered students without formal registration and may be in violation of immigration laws when not properly registered.

International students who have questions about registration requirements should contact the Office of Recruitment and Student Affairs.

Admission Status

MPA applicants may be permitted to take courses before the admission process is completed or they may be admitted before certain conditions have been met; each student must, however, attain regular status (standing) admission to the school prior to or upon completion of 8 graduate units.

Limited Status Students (Preadmission)

Students taking courses who have not been admitted to the school are designated limited status students. These students may be taking courses to meet prerequisites; they may be waiting for part of their application package materials to arrive; or they may be investigating whether an MPA is the best choice for them.

To be considered for limited status enrollment, interested students need to complete the Price School of Public Policy Limited Student Application for Enrollment form and submit official or unofficial copies of their transcripts from their bachelor's degree granting institution. Students with a 3.0 grade point average (A = 4.0) may enroll in up to 8 units of graduate courses in the Price School of Public Policy.

Price School of Public Policy Limited Student Application for Enrollment forms may be obtained from the Admissions Office, Price School of Public Policy, University of Southern California, RGL 111, Los Angeles, CA 90089-0626; (213) 740-6842. Limited students may only enroll during the in-person registration period (the week before classes begin).

Limited status students may apply only 8 units of appropriate graduate work toward the MPA after admission. Units beyond these first 8 must be petitioned for through the school. Students on limited status are encouraged to complete the application and admission processes before completing those first 8 units.

Ph.D. Candidates

Ph.D. students who pass the qualifying examinations and complete the MPA course requirements or their equivalent during their course work at USC may, with the recommendation of the coordinator of the MPA program, apply for and receive the MPA degree.

MPA Curriculum

The MPA course requirements are designed to address current and future professional competencies for accomplishment; to establish a sequence of basic required courses; and to maximize student choice and depth in specialized studies. The curriculum requires 40 units for completion (41 for pre-service students). Pre-service students, that is, those who have less than 25 months' employment experience in a professional level position, are also required to take an internship that includes a one-unit seminar.

CORE COURSES		UNITS
PPD 500	Intersectoral Leadership	2
PPD 501ab	Economics for Policy, Planning and Development	2-2
PPD 540	Public Administration and Society	4
PPD 546	Capstone in Public Administration	4

Three of the required core courses (PPD 500, PPD 501ab and PPD 540) provide the foundation to the field and the fourth (PPD 546) serves as a capstone course. PPD 540 must be taken in the first semester or within the first 12 units and PPD 546 must be taken in the final semester or last 12 units of the student's program.

Management Competencies

MPA students are expected to develop managerial competencies in three areas by taking at least one course in each of the following areas:

MANAGEMENT COMPETENCIES	UNITS
<i>Analytic Methods</i>	
PPD 542* Policy and Program Evaluation, or	
PPD 557* Modeling and Operations Research, or	
PPD 666* Administrative Research and Analysis	4

Organizational Behavior

PPD 545 Human Behavior in Public Organizations	4
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(With the approval of the MPA or center director, the student may choose a human resource management elective to fulfill this requirement.)

Finance

PPD 541 Public Financial Management and Budgeting, or	
PPDE 645 Financial Management of Nonprofit Organizations	4

(With the approval of the MPA or center director, the student may choose a financial management elective to fulfill this requirement.)

*The statistics requirement must be met before enrolling in PPD 542, PPD 557 or PPD 666.

Area Cluster Electives

Students may elect to devote their elective courses (14 units) to gain depth in a designated area cluster. These areas include the following: community and economic development, environmental management and land-use policy, financial management, health administration, human resources management, information technology management, intergovernmental management, international policy and management, local government, nonprofit management, planning, public policy, real estate development, transportation, and urban form and design.

Students may elect to follow a more generalist perspective and take their elective courses from the array of elective offerings.

Thesis Option

Thesis option, PPD 594ab Master's Thesis (4 units), may be taken as part of the elective category. Information regarding the thesis contract is available from the MPA director. All theses and dissertations submitted in fulfillment of requirements for graduate degrees must conform to university regulations with regard to form and method of preparation.

Internships

Pre-service students — that is, those with fewer than 25 months' employment in a professional level position — are required to complete at least 300 hours of an internship and an internship seminar (PPD 543). MPA students may enroll in the internship seminar during their first semester. Students complete internships in conjunction with the internship seminar.

Specialization in Intergovernmental Management

In addition to the substantive area cluster, MPA students may choose the specialization in intergovernmental management.

Students enroll in courses and serve in internships in at least two levels of governance. A student may take courses toward this specialization at either the Los Angeles or USC State Capital Center. Internships may be taken through either of these centers. Students electing this specialization meet with the intergovernmental management coordinator at either the Los Angeles or the USC State Capital Center to design their program.

To complete this specialization, students complete three courses from the following lists (with at least two drawn from the first list): (1) PPD 661, PPD 662, PPD 663, PPD 669, PPD 670; (2) PPD 688, PPD 689, PPD 690.

Master of Public Policy

The Master of Public Policy (MPP) program is designed to prepare students for careers as professional policy analysts. Through an interdisciplinary curriculum and real world experience, students gain an understanding of the policy process, and develop the capacity to formulate, analyze and implement public policy.

The MPP degree is offered at the University Park Campus only.

Requirements for Admission

Candidates for admission must have maintained a minimum B (3.0) average during their undergraduate degree work and attain a score of at least 500 on the verbal and at least 500 on the quantitative sections of the GRE. Exceptions to these requirements are allowed if justified by outstanding work experience, letters of recommendation, or demonstrated improvement in academic performance during undergraduate studies.

Applicants must have a bachelor's degree from an accredited institution and have a basic competence in descriptive and inferential statistics. This prerequisite may be met in one of two ways: (1) entering students must have passed an undergraduate inferential statistics class, with a grade of "B" or better, at an approved university within three years of matriculation, and must pass the MPP lab associated with PPD 554 Foundations of Policy Analysis, or (2) take PPD 502x Statistical Foundations for Public Management and Policy and complete with a grade of "B" or better. If students select to take PPD 502x, the units associated with this class may not be used toward the MPP degree.

Degree Requirements

Students are required to complete 48 units of graduate work, with 28 units of core and 20 elective units divided between management, analytic and specialization areas.

REQUIRED CORE COURSES		UNITS
PPD 500	Intersectoral Leadership	2
PPD 501ab	Economics for Policy, Planning and Development	2-2
PPD 554	Foundations of Public Policy Analysis	2
PPD 555	Public Policy Formulation and Implementation	4
PPD 557	Modeling and Operations Research	4
PPD 558	Multivariate Statistical Analysis	4
PPD 560	Methods for Policy Analysis	4
PPD 561ab*	Policy Analysis Practicum	1, 3

*During a student's final semester of the program, the *Policy Analysis Practicum* is required as a component of the program's 48 units of course work. The practicum is an opportunity for students to apply their analytic skills to a current problem for an actual client. Admission to the practicum is granted on the approval of the MPP director, and normally requires prior completion of most required courses.

Electives

Students complete 4 units of management elective, 4 units of analytic elective and 12 units of specialization elective. These electives typically are selected to support specialization in a substantive policy area (e.g., environment or community economic development).

MANAGEMENT ELECTIVE (CHOOSE 4 UNITS)		UNITS
PPD 516	Financial Accounting for Health Care Organizations	4
PPD 541	Public Financial Management and Budgeting	4
PPD 545	Human Behavior in Public Organizations	4
PPD 654	Information Technology Management in the Public Sector	4
PPD 656	Political Management: Theory and Applied Techniques	4
PPD 661	Intergovernmental Management: Local Perspective	4
PPD 662	Intergovernmental Management: State Perspective	4
PPD 675	Nonprofit Management and Leadership	4
PPD 687	Strategic Management in the Nonprofit Sector	4
PPD 690	Alternative Dispute Resolution	4

ANALYTIC ELECTIVE (CHOOSE 4 UNITS)		UNITS
PPD 542	Policy and Program Evaluation	4
PPD 587	Risk Analysis	4
PPD 617	Urban Demography and Growth	4
PPD 647	Finance of the Public Sector	4

In addition, students take 12 units of additional electives selected by the students with the advice of the academic adviser or director of the MPP program. These electives typically are taken in an area of policy specialization, such as: community economic development, education policy, environmental policy, health,

infrastructure, international policy and development, media and communications, philanthropy and non-profit, and transportation.

Students may not take more than 12 course units outside of the Price School of Public Policy without written consent of the director of the MPP program.

Master of Public Policy and Management

The International Public Policy and Management (IPPAM) Program offers a Master of Public Policy and Management (MPPM). The degree is designed for managers, planners and analysts involved in social sector programs who want to strengthen their management skills and further develop their policy analysis capabilities. For professionals working in the social sectors, IPPAM offers an opportunity to deepen their conceptual understanding of the forces driving change in their sectors and to develop an analytical approach for accessing and reshaping social policy. The program is well-suited for mid-career professionals working in the social sectors, such as physicians, nurses and pharmacists in the health professions; educators and administrators in the teaching professions; government regulators, managers and staff; community organizers, aid workers and others working in the NGO sector; and reporters and others in the news professions interested in covering social issues.

This program is specifically designed for international students and U.S. students who wish to work in international settings, including the Pacific Rim, Latin America and countries in other regions with evolving social systems.

Students are required to complete a minimum of 32 units. All students must fulfill core requirements (18 units) in fundamental policy analysis and management disciplines and an additional 14 units in an area of concentration chosen by the student. The core requirements include: PPD 501a Economics for Policy Planning and Development; PPD 542 Policy and Program Evaluation; PPD 569 Applied International Policy Analysis and Management Project; PPD 570 Applied Statistics for Planning, Policy and Management; and PPD 571 International Public Policy and Management Seminar.

Students select an area of concentration in which they complete a set of recommended elective courses. Each concentration allows students to pursue in depth one or more areas of particular relevance to their career goals. The concentration areas enable students in the interdisciplinary IPPAM program to establish a second "home" in one of the school's programs, such as health administration or urban planning. Students are required to consult with IPPAM faculty advisers to choose elective courses from a recommended list of courses relevant to the MPPM degree.

Through the integrated curriculum, participants gain practical skills which are developed within an appropriate conceptual context. Many of the courses and applied projects integrate examples and data from the student's home countries. Program graduates will have achieved advanced competency in disciplines that include public sector economics, applied methods for public policy analysis, evaluation and management.

Core faculty are drawn from the Price School of Public Policy and include senior, experienced faculty along

with leading practitioners and experts in applied fields such as community development, international trade policy, health care policy, and so forth. In addition to the participation of distinguished visiting scholars as guest lecturers in class sessions, the program features an international seminar on public policy and management with guest lectures by policy makers. The opportunity to interact with leading scholars, policy makers, and practitioners from the United States and abroad is an essential component of the program.

The program begins in mid-June with intensive English language workshops and the course in applied statistics. The language workshop can be waived for students with 250+ computer-based TOEFL scores or 600+ paper-based TOEFL scores, or a score of 6.5 on the IELTS exam with no less than a score of 6 on each band score. In the fall semester, international students transition into the regular program consisting of required courses and electives in their chosen concentration area. Some international students may be required to enroll in additional English language workshops depending on how they score on required English exams. Most students can expect to complete the program in 13 months. The intensive nature of the program is designed for full-time students who take a leave from work while enrolled in the program. This approach minimizes the amount of time that professionals must be away from their full-time careers to pursue an advanced degree.

Applicants should have at least a bachelor's degree from an accredited university and three to seven years of significant professional experience. The IPPAM Program office is located in the Price School of Public Policy, Von KleinSmid Center, Room 253, phone (213) 740-0547, fax (213) 821-1331, email ippam@usc.edu.

USC Dollinger Master of Real Estate Development

The Master of Real Estate Development program is a carefully integrated program that brings together the three main elements of real estate development: design, finance and policy. It is a one-year full-time or two-year evening executive program of study designed to provide students with the knowledge and skills they require to compete successfully in the development industry. The curriculum encompasses eight areas of study with which developers must be conversant, including real estate law, economics, finance, market analysis, negotiation, planning, architecture and engineering. Courses are taught by full-time faculty members from the Price School of Public Policy. In addition, practicing developers, lawyers, planners and other professionals make regular contributions to the course of study, helping students link learning to practice.

Curriculum Requirements

The program of graduate study for the professional degree requires successful completion of the core curriculum (36 units), elective courses (8 units) and a comprehensive examination. Students must complete a total of 44 units.

Core Curriculum

The core comprises 13 lecture-seminar courses that combine lectures, projects, case analyses, and

exercises which allow students to experience all facets of the developer's tasks and problems. The integrative project, RED 575L, provides problem solving exercises and the evaluation of actual development situations. Courses emphasize various design, regulatory and fiscal problems associated with urban development and the developer's role in improving development standards in the industry.

CORE COURSES		UNITS
PPD 500	Intersectoral Leadership	2
PPD 501a	Economics for Policy, Planning and Development	2
RED 509	Market Analysis for Real Estate	4
RED 542	Finance of Real Estate Development	3
RED 544	Real Estate Capital Markets	2
RED 546	Application of Real Estate Finance to Problems of Development	3
RED 547	Project Management and Construction	2
RED 551	The Approval Process	4
RED 562	Legal Issues in Real Estate Development	4
RED 573	Design History and Criticism	2
RED 574	Building Typologies	2
RED 575L	Community Design and Site Planning	4
RED 598	Real Estate Product Development	2

Eight units of elective course work are required for the Master of Real Estate Development. These courses may be taken in the schools of Public Policy, Architecture, Business, Law and the Department of Civil Engineering. Admission to some classes requires advanced prerequisites and is subject to availability and approval of the instructor.

Comprehensive Examination

Successful completion of a comprehensive written and oral examination is required of all students seeking the Master of Real Estate Development degree. The examination explicitly covers the core courses. It is normally administered late in the spring semester by a faculty committee appointed by the dean. Students who fail the examination once may take it again within one year. The examination may not be repeated more than once.

General Requirements

Residence and Course Load

The Master of Real Estate Development may be completed on either a full-time or part-time basis. Both options begin in the summer session in June. The full-time program requires 11 months of study. The evening executive option is completed over a two-year period. Students are also expected to participate fully in all extracurricular activities associated with the Master of Real Estate Development program, including the weekly speaker series.

Students who wish to take a leave of absence for a semester or longer must request it from the dean in writing; such leaves may be granted for up to one year.

Students must have an approved laptop computer as required by instructors and must demonstrate calculator and spreadsheet skills.

Time Limit

The time limit within which students in the program must complete the requirements for the Master of Real Estate Development is governed by the following regulations:

All requirements for the Master of Real Estate Development must be completed within five calendar years from the first course at USC applied toward the degree.

University regulations prohibit the acceptance of credits for courses taken toward a Master of Real Estate Development degree more than seven years after the date they were successfully completed.

Grade Point Average Requirement

While enrolled in the program, a student must maintain a grade point average of at least 3.0 for all courses taken toward the degree.

Probation and Disqualification

Any student with a cumulative grade point average of below 3.0 for all courses taken in the program will be placed on academic probation. A student may be disqualified to continue toward a graduate degree if the student has been on academic probation for two consecutive semesters. Whether or not on academic probation or warning, a student may be disqualified at any time from continuing in the program if the dean of the school, after consultation with the faculty, determines that the student is deficient in academic achievement or in another qualification required for the attainment of the Master of Real Estate Development degree.

Course Exemptions and Transfer of Credits

Courses taken toward other degree programs, if determined by the dean to be equivalent to courses in the curriculum, may be accepted for subject credit only. All students are required to complete 44 units while enrolled in the Master of Real Estate Development program. The acceptance of previous course work for subject credit will enable the student to take additional elective courses.

Graduate Professional Labs

USC's Price School of Public Policy offers professional consulting-like experience for graduate students in its core master's degree programs. Participants are presented with a challenging professional assignment and a well-defined client and terms of reference. Students typically work in teams to produce a professional report and related materials that are presented to the client at the close of the assignment. The terms of reference for the lab vary each year depending upon the client, the instructor and the setting, among other considerations.

In principle, these professional labs may be held anywhere, either in Los Angeles, elsewhere in the United States or abroad.

The Price School professional laboratory teaches students to integrate scholarly knowledge with professional practice. Likewise, it helps participants make the transition from the classroom back to a "real world" setting. In the case of international labs, participants also

gain a deeper and more direct understanding of how the culture of professional practice can vary from one setting to the next. Through the Price School professional laboratory students build their credentials and experience while also extending their network of professional contacts.

These professional labs are intended primarily for graduate students in public administration, planning, real estate development, public policy and health administration. A distinctive feature of the professional laboratory is that it is intended as an integrative professional experience across the school, so that students from any of these programs may participate fully.

Each summer the Price School offers one or more international labs/workshops. Recent international labs have been held in China, Brazil, Germany, Morocco, Italy and Vietnam. All students are encouraged to take at least one international lab course.

Exchange Program

The Hertie School of Governance exchange program is a one-semester exchange program offered during the fall semester. The program will provide opportunities for students to acquire knowledge and skills necessary to become global leaders and succeed in a global market. All instruction is in English; proficiency in a foreign language is not required. Courses completed at the Hertie School of Governance are graded credit/no credit on the student's USC transcript. The courses are selected from a list approved by the Price School of Public Policy. Students must work with their program administrator to understand how the courses will return to their degree.

Graduate Certificate Programs

Certificate in Transportation Systems

The graduate Certificate in Transportation Systems is an interdisciplinary program administered by the Department of Civil Engineering. The certificate program allows students to specialize in transportation applications, while simultaneously receiving a degree in their home department. The certificate in transportation systems combines elements of transportation engineering with transportation policy, planning and project management. The program is especially appropriate for students intending to pursue careers as developers of transportation technologies or as implementors of technologies within government agencies.

Students electing the certificate program apply to the Department of Civil Engineering.

Course prerequisites for the program are:

- 1) one course in statistics or uncertainty, equivalent to CE 408, ISE 225 or PPD 404x;
- 2) one course in engineering economy, equivalent to ISE 460;
- 3) one course in microeconomics, equivalent to ECON 203; and
- 4) one course in a high level programming language, such as C or Fortran.

These prerequisites may be satisfied after enrollment in the certificate program by taking the indicated courses or their equivalent. Graduate students cannot receive credit for courses numbered below 400. Detailed admissions requirements are published by the Department of Civil Engineering.

Requirements for Completion

The curriculum consists of five graduate courses for a total of 17 units.

REQUIRED COURSES		UNITS
CE 471	Principles of Transportation Engineering, or	
CE 519	Transportation Engineering	3
CE 583	Design of Transportation Facilities, or	
CE 585	Traffic Engineering and Control	3
ISE 515	Engineering Project Management	3
PPD 633	Urban Transportation Planning and Management	4
PPD 634	Institutional and Policy Issues in Transportation	4

Qualified students holding a bachelor's degree also have the option of enrolling in the certificate program without receiving a separate graduate degree.

Certificate in Nonprofit Management and Policy

This graduate certificate program provides students with a foundation in nonprofit management and policy. The certificate develops nonprofit management skills and provides students the knowledge needed to understand the increasing importance of nonprofits in society and their role in forming and influencing public policy.

Applicants for the Certificate in Nonprofit Management and Policy who are currently enrolled in a graduate program at USC and are in good standing with a 3.0 GPA only need to submit the appropriate paperwork for adding the certificate program, which may be obtained from the student services adviser.

Applicants for the Certificate in Nonprofit Management and Policy who have not matriculated at USC must make a formal application for admission to the certificate program, provide transcripts of all college work, a resume and one letter of recommendation.

The certificate in nonprofit management and policy consists of 16 units of graduate course work.

CORE COURSES (12 UNITS)		UNITS
PPD 675	Nonprofit Management and Leadership	4
PPD 687	Strategic Management in the Sector	4
PPD 689	The Nonprofit Sector and Philanthropy	4

Elective Course

Students select 4 elective units. The elective course(s) may be taken from within the Price School of Public Policy course offerings or other USC units. The elective selection must be approved by the faculty adviser for the certificate program.

Up to 10 units of the certificate may be applied to both the certificate and the core requirements or electives in the Master of Public Administration program. Up to 12 units may be applied toward both the certificate and the core or electives in the Master of Public Policy program.

The Master of Public Administration director will provide advisement.

Certificate in Political Management

This graduate certificate program provides students with a foundation in political management. It is designed to provide expertise for students who wish to work in public policy advocacy, in political relations, with elected officials and with the public, nonprofit or private sectors.

Applicants who are currently enrolled in a graduate program at USC and are in good standing with a 3.0 GPA only need to submit the appropriate paperwork for adding the certificate program which may be obtained from the student services adviser.

Applicants who have not matriculated at USC must make a formal application for admission to the certificate program, as well as provide transcripts of all college work, a resume and one letter of recommendation. The Certificate in Political Management consists of 14–16 units of graduate course work depending on the courses selected.

CORE COURSE (4 UNITS)		UNITS
PPD 658	Advocacy in Public Administration	4
FOUNDATION COURSE		UNITS
Select one: 2 or 4 units		
PPD 500	Intersectoral Leadership	2
PPD 540	Public Administration and Society	4
PPD 554	Foundations of Public Policy Analysis	2
PPD 684	Leadership Development in the Public and Nonprofit Sectors	2
CHOOSE TWO OF THE FOLLOWING (8 UNITS)		UNITS
PPD 616	Participatory Methods in Planning and Policy	4
PPD 656	Political Management: Theory and Applied Techniques	4
PPD 657	Political Leadership in Public Organizations	4
PPD 693	Communicating Public Policy	4

Up to 10 units of the certificate may be applied toward both the certificate and to the core requirements or electives in the Master of Public Administration. Up to 12 units may be applied toward both the certificate and toward core or electives in the Master of Public Policy or Master of Planning.

The director of the graduate programs in public policy and management will provide advisement.

Certificate Programs in Public Financial Management

Students enrolled in the Public Financial Management certificate program are required to take 52 graduate units of course work (53 for pre-service students). Fourteen of these units are MPA core courses (PPD 500, PPD 501ab, PPD 540 and PPD 546); and 12 units of management competencies (PPD 541, PPD 542 or PPD 557 or PPD 666, and PPD 545). In addition, students must take 16 units of course work in finance and related subjects (PPD 516, PPD 554* or PPD 555, PPD 647 and PPD 661 or PPD 662 or PPD 669). Ten units of approved elec-

tives will be selected from among: PPD 510b, PPD 542, PPD 652, PPD 660, PPD 661, PPD 662, PPD 669, PPD 679 and PPD 688. Pre-service students must also serve an internship and be enrolled in PPD 543.

Students may receive this certificate with a specialization in intergovernmental management provided they complete the three course sequence (PPD 661, PPD 662, PPD 669). Students may satisfy this requirement if they apply two of these courses toward the 10-unit elective requirement and apply the third course toward the 16-unit finance and related subjects requirement.

**Students who select PPD 554 (rather than PPD 555) must select an additional 2-unit elective.*

Certificate Programs in Health Management and Policy Programs

The Health Management and Policy Programs of the Price School of Public Policy offers certificate programs in specialized areas of health care administration. The certificates are designed to provide practitioners with means for improving or updating their knowledge and experience in a challenging and professionally relevant course of study. Certificates are offered in Administration of Long Term Care Programs and Management of Ambulatory Care Systems. Applicants for the certificate programs must make formal application for admission to the certificate program, provide transcripts of all college work, supplemented by three letters of recommendation, including one from a former instructor, a resume and a personal statement describing their career goals and the relationship of the certificate to those ends.

It is expected that applicants to the certificate programs should have graduated from a recognized college with an approximate grade point average of B in the last 60 units of college work. Non-graduates may be admitted if the director believes that there is evidence to suggest that the applicant is capable of graduate level work.

Successful completion of the certificate will not be a deciding factor in the admission decision for the degrees offered by the Health Management and Policy Programs or the Price School of Public Policy.

The Ambulatory Care program requires 20 units of graduate credit including a 16-unit core and a four-unit specialized seminar in the area of the certificate concentration. Core courses (16 units) are: PPD 509; PPD 510a or PPD 516; PPD 545 or PPD 557; one elective. One specialized seminar as follows (four units): PPD 600, PPD 601 or GERO 550.

The Certificate in Administration of Long Term Care Programs requires 16 units of course work. The required courses are GERO 500; PPD 513; PPD 518; PPD 601; PPD 510a or PPDE 645. The program can be completed via distance learning.

Completing a certificate program does not constitute completion of or admission to the Master of Health Administration (MHA) or Executive Master of Health Administration (EMHA) degree programs nor will it be a deciding factor in the admission decision to those programs. Students in the MHA program, however, may qualify for award of these certificates if they complete the applicable course requirements.

Certificate in Public Management

This program provides students with a solid foundation of training and skills in management. Individuals who need training in public administration but who are

unable to enroll for the Master of Public Administration (MPA) degree may find this certificate program of particular interest. Key to the program's success is the close integration of the academic curriculum and the application of skills and theory to managerial work assignments. Students may enroll at any time throughout the year.

The program consists of four courses: PPD 540, PPD 542, PPD 545, and one elective selected from any 500-level offering in the Price curriculum.

Certificate in Public Policy

This graduate certificate program provides students with a foundation in public policy analysis. It is designed to provide expertise in public policy to individuals who do not want to pursue the Master of Public Policy degree. Potential students include those who are pursuing another degree and want to complement that work with a specialization in public policy, as well as qualified students holding a bachelor's degree who have not matriculated at USC. The certificate develops policy analytic skills and their integration with a policy issue area of interest to the student.

Applicants for the Certificate in Public Policy who have not matriculated at USC must make a formal application for admission to the certificate program, provide transcripts of all college work, a resume and one letter of recommendation.

The program consists of 16 units of graduate course work.

CORE COURSES (8 UNITS)		UNITS
PPD 500	Intersectoral Leadership	2
PPD 554	Foundations of Public Policy Analysis	2
PPD 555	Public Policy Formulation and Implementation	4
Choose 4 units from:		
PPD 501ab	Economics for Policy, Planning and Development	2-2
PPD 557	Modeling and Operations Research	4
PPD 558	Multivariate Statistical Analysis	4
PPD 560	Methods for Policy Analysis	4

Choose one course from a policy area.

There are many policy issues courses from which to choose (e.g., health, nonprofit, transportation, environment, housing).

The Master of Public Policy director will provide advisement.

Certificate in Homeland Security and Public Policy

This graduate certificate program provides students with a foundation in homeland security and public policy. It is designed to provide expertise to individuals working in the field with an interest in refining their risk and security analysis skills as well as others with interest in the field. The certificate develops risk analysis skills and provides students with the knowledge needed to understand the issues surrounding the increasingly important issues of homeland security and public policy.

Applicants for the Certificate in Homeland Security and Public Policy who are currently enrolled in

a graduate program at USC in good standing with a 3.0 GPA only need to submit the appropriate paperwork for adding the certificate program which may be obtained from the student services adviser.

Applicants for the Certificate in Homeland Security and Public Policy who have not matriculated at USC must make a formal application for admission to the certificate program, provide transcripts of all college work, a resume and one letter of recommendation.

The certificate in homeland security and public policy consists of 15–16 units of graduate course work depending on the course selected.

REQUIRED CORE COURSE		(4 UNITS)
PPD 683	Homeland Security and Public Policy	4
Choose three of the following (11–12 units):		
PPD 501ab	Economics for Policy, Planning, and Development	4
PPD 557	Modeling and Operations Research	4, or
ISE 530	Introduction to Operations Research	3, or
ISE 562	Value and Decision Theory	3
PPD 587	Risk Analysis	4

Certificate in Sustainable Cities

The sustainable cities graduate certificate program is a multidisciplinary certificate program open to USC students pursuing graduate degrees in many disciplines including anthropology, architecture, biology, chemistry, communication, earth sciences, economics, education, engineering, geography, international relations, political science, public policy, sociology, urban planning and others.

Creating sustainable cities for the 21st century is a major challenge for society. The growth of cities, caused by natural population increase and massive rural-to-urban population flows, poses critical environmental problems that reach far beyond municipal boundaries and transcend national borders. Resolving such problems requires contributions from natural scientists, engineers, behavioral scientists and policy experts. To

solve problems of national concern, such scientists must work productively with public administrators, political decision-makers and diverse interest groups.

This program seeks to equip graduate students with both the requisite knowledge of other fields and the political, interpersonal and communication skills necessary to succeed in research and practical contexts.

Applicants for the certificate in sustainable cities who are currently enrolled in a graduate program at USC and are in good standing with a 3.0 GPA only need to submit the appropriate paperwork for adding the certificate program, which may be obtained from the student services adviser.

Applicants for the certificate in sustainable cities who have not matriculated at USC must make a formal application for admission to the certificate program, provide transcripts of all college work, a resume and one letter of recommendation.

REQUIRED COURSES (14–15* UNITS)		UNITS
ARCH 519	Sustainability in the Environment: Infrastructure, Urban Landscapes, and Buildings	3
CE 564*	Methods for Assessment and Protection of Environmental Quality (3), or	
ENE 502*	Environmental and Regulatory Compliance (3), or	
PPD 587	Risk Analysis (4)	3-4
PPDE 632	Sustainable Cities	4
*Students who select CE 564 or ENE 502 will complete 14 units for the certificate.		
Four units from:		
PPD 568	Environmental Governance and Sustainability	2
PPD 619	Smart Growth and Urban Sprawl: Policy Debates and Planning Solutions	4
PPD 621	Environmental Impacts	4
PPD 692	Transportation and the Environment	4

PPDE 660	Environmental Policy Design and Analysis	2
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Each academic unit, department or program will determine the number of units completed that may be applied to the student's master's or doctoral degree.

Certificate in Health Systems Operations

This 17-unit graduate certificate is jointly sponsored by the Epstein Industrial and Systems Engineering Department and the Price School of Public Policy (Master of Health Administration program), and administered by the Epstein Industrial and Systems Engineering Department. See Industrial Systems and Engineering Department on page 667xx for course requirements.

Certificate in Real Estate Development

This graduate certificate program provides students with a foundation of the key elements of real estate development. It is designed to provide these foundations for non-Master of Real Estate Development students who wish to obtain this knowledge to complement their graduate program of study as well as their careers. For admissions information, visit the Price School Website.

The certificate in real estate development consists of 12 units of graduate course work: RED 510, RED 511 and RED 512.

Non-Credit Programs Offered by the Center for International Training and Development Management Effectiveness Program

This is a four-week intensive training program in the art and science of management. The program is designed to enhance leadership effectiveness and the development of a management generalist perspective.

International Executive Development Laboratory

This five-week laboratory focuses on issues in executive leadership, strategic management, environmental analysis, international finance and economics, computer-based project planning, and implementation of planned change strategies.

Dual Degree Programs

A dual degree program is an academic option that allows a student to enroll in two graduate programs simultaneously. Application must be made to both schools, and if accepted to both, the student pursues a specially designed program which combines selected courses from the two academic units. Students are required to seek advisement from both schools. The student will have the opportunity to acquire the knowledge and skills from two fields of study.

The dual degree program enables the student to integrate a closely related field with planning or development. The purpose of the dual program is to provide an enriched educational experience; accordingly, concurrent course work in the two fields is required.

Since the unit requirements of dual degrees depend upon the mutual transfer of units between the two academic units, no other transfer of credits will be allowed.

Students who decide, at any point, to earn only one of the two degrees must meet all the regular requirements for earning that degree alone.

Students in Master of Planning dual degree programs must fulfill the comprehensive examination and appropriate internship requirements except where noted otherwise.

Master of Planning/Master of Architecture

The Master of Planning/Master of Architecture dual degree program facilitates highly related cross-disciplinary studies in architecture (through the USC School of Architecture) and in planning at the master's level. This program offers students interested in developing a career in urban design an opportunity to make more substantial commitments in both disciplines and to achieve a more coherent and extensive knowledge in the design of built environments and public policy. Candidates

must already possess a degree in architecture. This dual degree program normally requires five semesters in residence.

Requirements

Requirements for completion of the dual degree program are 72 units, including 36 units in architecture and 36 units in planning. See the School of Architecture, page 128xx, for course requirements.

Master of Planning/Master of Business Administration

The Master of Planning/Master of Business Administration dual degree program enables the student to understand the conduct and requirements of business, accounting, corporate and strategic planning, real estate marketing, and finance. Further, students gain expertise in public policy, city planning and the

interpretation of government regulations. Exposure to both fields becomes an educational as well as a professional asset for careers in either public service or private enterprise. This dual degree program normally requires five semesters in residence.

Requirements

A total of 84 units is required for the dual degree: 48 units of work in the USC Marshall School of Business and 36 units in the Price School of Public Policy. Required courses that must be taken in the Marshall School of Business include: all required courses in an MBA program and graduate business electives sufficient to bring the total units completed in the Marshall School of Business to at least 48. Dual degree students must not count courses taken outside the Marshall School of Business toward the 48 units.

PLANNING		UNITS
PPD 500	Intersectoral Leadership	2
PPD 501a	Economics for Policy, Planning and Development	2
PPD 524	Planning Theory	2
PPD 525	Statistics and Arguing from Data	2
PPD 526	Comparative International Development	2
PPD 527	The Social Context of Planning	2
PPD 529	Legal Environment of Planning	2
PPD 533	Planning History and Urban Form	2

Note: 2-unit courses may be offered in seven-and-a-half week blocks.

Concentration Methodology: A 4-unit course selected from the concentration list shown in the MPL program.

Planning Studios: PPD 531L (4, 4) to total 8 units.

Electives: 8 units of elective courses taken within the Price School of Public Policy.

Dual degree students, like all other MPL students, must take a comprehensive examination and fulfill the internship requirement.

Master of Planning/Master of Arts in Economics

The USC Price School of Public Policy and the Department of Economics jointly offer a two-year program leading to the MPL and M.A. degrees. Applicants must apply to the Price School of Public Policy and the USC Graduate School and meet the admission requirements of both.

Requirements

Requirements for completion of the dual degree program are 58 units, including 24 units in economics and 34 units in planning.

ECONOMICS		UNITS
ECON 500	Microeconomic Analysis and Policy	4
ECON 501	Macroeconomic Analysis and Policy	4

ECON 513	The Practice of Econometrics	4
ECON 594abz	Master's Thesis	4
Electives	Economics	8

PLANNING		UNITS
PPD 500	Intersectoral Leadership	2
PPD 524	Planning Theory	2
PPD 526	Comparative International Development	2
PPD 527	The Social Context of Planning	2
PPD 529	Legal Environment of Planning	2
PPD 533	Planning History and Urban Form	2

Note: 2-unit courses may be offered in seven-and-a-half week blocks.

Planning Studios: PPD 531L (4, 4) to total 8 units.

Electives: 14 units of elective courses taken within the Price School of Public Policy.

Thesis: A thesis is required on a subject interrelating economics and urban planning and development. Students must register in a minimum of 4 units of ECON 594abz (2-2-0) and maintain continuous registration until completion of the thesis.

Internship: Dual degree students in this program must fulfill the internship requirement.

During the summer after the first year of graduate study, the student normally serves an internship in a planning organization. The student must complete a thesis acceptable to both faculties.

Master of Planning/Master of Real Estate Development

The Master of Planning/Master of Real Estate Development dual degree program enables students to expand their skills in planning, land development, market analysis, finance and economics. Exposure to both fields becomes an educational as well as a professional asset for careers in either real estate development or planning. This dual degree program normally requires five semesters, including one summer, in residence.

Requirements

A total of 74 units is required for the dual degree, all from within the Price School of Public Policy.

REQUIRED COURSES		UNITS
PPD 500	Intersectoral Leadership	2
PPD 501a	Economics for Policy, Planning and Development	2

PLANNING CORE		UNITS
PPD 524	Planning Theory	2
PPD 525	Statistics and Arguing from Data	2
PPD 526	Comparative International Development	2
PPD 527	The Social Context of Planning	2
PPD 531L	Planning Studio	4

PPD 533	Planning History and Urban Form	2
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REAL ESTATE CORE		UNITS
RED 509	Market Analysis for Real Estate	4
RED 542	Finance of Real Estate Development	3
RED 544	Real Estate Capital Markets	2
RED 546	Applications of Real Estate Finance to Problems of Development	3
RED 547	Project Management and Construction	2
RED 551	The Approval Process	4
RED 562	Legal Issues in Real Estate Development	4
RED 573	Design History and Criticism	2
RED 574	Building Typologies	2
RED 575L	Community Design and Site Planning	4
RED 598	Real Estate Product Development	2

Note: 2-unit courses may be offered in seven-and-a-half week blocks.

Electives: 12 units of PPD courses and 12 additional units of elective courses taken within the Price School of Public Policy.

Students are also required to complete a comprehensive examination. Students have the option of selecting either the existing MPL or existing MRED examination.

The internship requirement is waived for students who enter the program with professional experience in either planning, real estate or a related field.

Master of Planning/Master of Science in Gerontology

The M.S./MPL dual degree is one of a few in the nation which combines the knowledge of the older population with the skills needed to plan services for older people. The MPL prepares the graduate for the responsibilities involved in development of public and private institutions and programs. The M.S. indicates a special focus on the older person and the skills to analyze and design programs for this growing population. The M.S. is offered through the USC Davis School of Gerontology.

Requirements

Requirements for completion of the dual degree program are 66 units including 26 units in gerontology, 36 units in planning and a minimum of 4 units of thesis in either gerontology or planning, as follows:

GERONTOLOGY		UNITS
GERO 510	Physiology of Development and Aging	4
GERO 520	Life Span Developmental Psychology	4
GERO 530	Life Span Developmental Sociology	4
GERO 540	Social Policy and Aging	4
GERO 591	Field Practicum	6
Gerontology elective		4

PLANNING		UNITS
PPD 500	Intersectoral Leadership	2
PPD 501a	Economics for Policy, Planning and Development	2
PPD 524	Planning Theory	2
PPD 525	Statistics and Arguing from Data	2
PPD 526	Comparative International Development	2
PPD 527	The Social Context of Planning	2
PPD 529	Legal Environment of Planning	2
PPD 533	Planning History and Urban Form	2

Note: 2-unit courses may be offered in seven-and-a-half week blocks.

Concentration Methodology: A 4-unit course selected from the concentration list shown in MPL program.

Planning Studios: PPD 531L (4, 4) to total 8 units.

Electives: 8 units of elective courses taken within the Price School of Public Policy.

Thesis: A thesis is required on a subject interrelating gerontology and planning. Students must register in a minimum of 4 units of PPD 594abz (2,2,0) or GERO 594abz (2,2,0). Students must maintain continuous registration until completion of the thesis.

Program Adaptation: The USC Davis School of Gerontology waives GERO 589 Case Studies in Leadership and Change Management because students enrolled in this program will have a primary professional focus in planning.

Master of Planning/Master of Landscape Architecture

The dual degree option in planning and landscape architecture (in the USC School of Architecture) trains professionals in policy and design, and to be competent with design problems at different scales, but with a distinctly urban focus. Candidates must be independently admitted to the Master of Planning and Master of Landscape Architecture programs. The dual degree program normally requires between five and seven semesters in residence.

Requirements

Completion of the dual degree requires 24 units of courses in urban planning, 10 units of thesis option I or II and either 32 units of landscape architecture (for those students admitted with advanced standing); 48 units of landscape architecture (for those students admitted with advanced placement); or 74 units of landscape architecture (for those students admitted to the three-year curriculum). See School of Architecture, page 128xx, for course requirements.

Master of Planning/Master of Public Administration

The Master of Planning/Master of Public Administration dual degree program is designed for the study of the relationships between planning and public administration.

Administrative skills, budgeting and fiscal analysis, a knowledge of operations services of local governments, and formulation and conduct of planning operations within the context of municipal management are required. This dual degree program normally requires five semesters in residence.

Requirements

Requirements for completion of the dual degree program are 60 units, including 26 units in public administration, 20 units in planning and 14 units of electives (8 in planning), as follows:

Prerequisites: 12 undergraduate course credit units of social science, not more than 8 units in any one field, are required. Students must also satisfy the MPA statistics prerequisite and other prerequisites. PPD 525 satisfies the Price School of Public Policy prerequisite in descriptive and inferential statistics for students in the Master of Planning/Master of Public Administration dual degree program. Dual degree students completing PPD 525 with a grade of B or higher (A = 4.0) need not take PPD 502x Statistical Foundations for Public Management and Policy.

PUBLIC ADMINISTRATION		UNITS
PPD 500	Intersectoral Leadership	2
PPD 501ab	Economics for Policy, Planning and Development	2-2
PPD 540	Public Administration and Society	4
PPD 541	Public Financial Management and Budgeting, or	
PPDE 645	Financial Management of Nonprofit Organizations	4
PPD 542	Policy and Program Evaluation, or	
PPD 557	Modeling and Operations Research, or	
PPD 666	Administrative Research and Analysis	4
PPD 545	Human Behavior in Public Organizations	4
PPD 546	Capstone in Public Administration	4

PLANNING		UNITS
PPD 524	Planning Theory	2
PPD 525	Statistics and Arguing from Data	2
PPD 526	Comparative International Development	2
PPD 527	The Social Context of Planning	2
PPD 529	Legal Environment of Planning	2
PPD 533	Planning History and Urban Form	2

Note: 2-unit courses may be offered in seven-and-a-half week blocks.

Planning Studios: PPD 531L (4, 4) to total 8 units.

Electives: 14 units of elective courses taken within the Price School of Public Policy. Eight of these elective units must be taken in the planning program. Dual degree students who complete PPD 502x with a grade of C or higher need not take PPD 525. Instead, they should take 2 additional elective units for a total of 16.

Dual degree students, like all other MPL students, must take a comprehensive examination and fulfill the internship requirement.

Master of Planning/Master of Public Health

The Master of Planning/Master of Public Health (MPL/MPH) dual degree is designed for individuals who envision a career that combines urban planning and public health disciplines. This dual degree combines the knowledge of urban planning with an understanding of health from a population perspective. It will provide training for planning, evaluating and guiding healthy community and urban development, and will enable graduates who seek to be agents of change within the profession to assume leadership roles in planning and in public health at the local, state and national levels. A total of 79 units are required for the dual degree.

PLANNING CORE REQUIREMENTS		UNITS
PPD 500	Intersectoral Leadership	2
PPD 501a	Economics for Policy, Planning and Development	2
PPD 524	Planning Theory	2
PPD 527	The Social Context of Planning	2
PPD 529	Legal Environment of Planning	2
PPD 533	Planning History and Urban Form	2

Concentration

Students must select 16 units in a concentration from one of the five concentrations in the planning program. Students are required to complete the gateway course and methodology course related to their concentration as part of their preparation for their comprehensive examination. The student's concentration must contain a 4-unit methodology course, a 4-unit gateway course and 8 other units. See further details on the concentrations in the Master of Planning section of the catalogue.

Planning Studios

Students will complete a total of 8 units of domestic or international planning studios under PPD 531L (4) to satisfy this requirement.

Dual degree students, like all other MPL students, must take a comprehensive examination and fulfill an internship requirement. Students will take 200 hours of planning internship placement in addition to 2 units in PM 596 and 2 units in PM 597. See below for further internship details for this dual degree.

PREVENTIVE MEDICINE — PUBLIC HEALTH CORE REQUIREMENTS		UNITS
PM 501	Foundations in Health Education and Promotion	4
PM 508	Health Service Delivery in the U.S.	4
PM 510L	Principles of Biostatistics	4
PM 512	Principles of Epidemiology	4

PM 529	Environmental Health: An Epidemiological Approach	4
PM 593*	Public Health Practicum	4 or 8

*PM 593 is a variable unit course, 4 or 8 units. Students are required to take 4 units for this dual degree.

HEALTH PROMOTION TRACK REQUIREMENTS		19 UNITS
PM 528	Program Design and Evaluation	4
PM 562	Intervention Approaches for Health Promotion and Disease Prevention	4
PM 563	Organizing and Mobilizing Communities for Public Health	4
Health promotion track electives		4
Other electives		3

All students admitted into the dual degree program must complete all requirements for each program.

Students in the dual degree may substitute two MPL core courses with PM courses. PPD 525 may be substituted with PM 510 and PPD 526 may be substituted with PM 563. Students enrolled in the dual degree are not required to take PPD 525 (as opposed to the stand alone MPL degree students) because they develop the necessary proficiencies in statistics in PM 510L, which provides them the opportunity to learn biostatistics, health statistics and the application of statistics necessary for success in this dual degree and for their future career. Dual degree students are not required to take PPD 526 and may take PM 563 as this course covers global health and international issues and will provide students with the information needed for success in their career.

Students may substitute 4 units of the health promotion track electives with relevant courses from the Price School of Public Policy. Relevant courses would include PPDE 630 (Community Health Planning), PPD 511, PPD 513, and PPD 514.

In addition, for PM 596, students complete an internship specific to meet the competencies of the health promotion track. Dual degree students would enroll in this 2-unit course and complete a 150-hour placement. The other 150 hours would be waived because students will spend 200 hours during their planning internship, acquiring additional relevant practical experience. (NOTE: This is consistent with the established dual degree programs with medicine, pharmacy, social work and clinical psychology).

The skeleton curriculum is described by these requirements. In fact, students will tend to take additional courses specific to their planning concentration and will enroll in additional units.

Units required to complete program: 79

Master of Planning/Master of Arts, Art and Curatorial Practices in the Public Sphere

The Master of Planning/Master of Arts, Art and Curatorial Practices in the Public Sphere dual degree program offers an unusually rich opportunity for students interested in developing a new knowledge base to become successful professionals working in the arena of organizing art projects in urban public space, planning and community development. Los Angeles and the facilities at USC provide a unique learning laboratory to educate a more competitive professional with a better

understanding of both the administration of public art and issues of urban planning.

Students must complete the following requirements in this program: 70 units, including 28 units in the Master of Arts, Art and Curatorial Practices in the Public Sphere program, 22 in policy, planning, and development, and 20 in a field of study with no more than 8 units taken from other USC programs.

MASTER OF ARTS, ART AND CURATORIAL PRACTICES IN THE PUBLIC SPHERE (28 UNITS)		UNITS
PAS 549	Methodologies of Art Writing	3
PAS 555abc	Curatorial Practicum	2-2-2
PAS 561	Curatorial/Organizational Models	2
PAS 571	Histories of Art in the Public Sphere	3
PAS 572	Contemporary Art in the Public Sphere	3
PAS 581	Critical Conversations	3
PAS 585	Theorizing the Public Realm	3
PAS 591	Field Internship Experience	1
PAS 594ab	Master's Thesis	2, 2

MASTER OF PLANNING (22 UNITS)		UNITS
PPD 500	Intersectoral Leadership	2
PPD 501a	Economics for Policy, Planning and Development	2
PPD 524	Planning Theory	2
PPD 525	Statistics and Arguing from Data	2
PPD 526	Comparative International Development	2
PPD 529	Legal Environment of Planning	2
PPD 531L	Core Laboratory Workshop	4
PPD 533	Planning History and Urban Form	2
PPD 627*	Design Skills for Urban Planners	4

Note: 2-unit courses may be offered in seven-and-a-half week blocks.

*PPD 627 is the methodology course for the Preservation and Design of the Built Environment concentration. Students who choose to do a concentration other than Preservation and Design of the Built Environment need to take the respective methodology course.

Dual degree students, like all other MPL students, must take a comprehensive examination and fulfill the internship requirement.

Field of Study (20 units)

Students may include no more than 8 units from outside the Roski School of Fine Arts and the Price School of Public Policy. The MPL program requires students to declare their concentration during the fall semester prior to taking the comprehensive examination in the spring semester. Students are required to complete the gateway course and methodology course related to their concentration as part of their preparation for their comprehensive examination. The student's concentration must contain a 4-unit methodology course, a 4-unit gateway course and 8 other units directly concerned with the subject matter of the concentration.

Capstone Projects

Students must complete a master's thesis or final thesis project through the Roski School of Fine Arts and the MPL comprehensive examination through the Price School of Public Policy.

Internship

All students must complete 400 hours of internship through the Price School of Public Policy. This internship may be partially or completely fulfilled through prior professional experience.

Master of Public Policy/Master of Planning

The Master of Public Policy/Master of Planning dual degree program gives students the opportunity to develop a depth of analytic and design skills with which to effectively address the problems of urban communities. The dual degree program normally requires six semesters in residence.

Requirements

Completion of the dual degree requires 72 units, including: PPD 500 and PPD 501a, 32 units in public policy, 22 units in planning, 6 units in electives and 8 units in planning studios/practicum.

Prerequisites

Applicants must have a basic competence in descriptive and inferential statistics. This prerequisite may be met in one of two ways: (1) entering students must have passed an undergraduate inferential statistics class, with a grade of "B" or better, at an approved university within three years of matriculation, and must pass the MPP lab associated with PPD 554 Foundations of Policy Analysis, or (2) take PPD 502x Statistical Foundations for Public Management and Policy and complete with a grade of "B" or better. If students select to take PPD 502x, the units associated with this class may not be used for graduate credit.

REQUIRED COURSES		UNITS
PPD 500	Intersectoral Leadership	2
PPD 501a	Economics for Policy, Planning and Development	2
PUBLIC POLICY COURSES		UNITS
PPD 501b	Economics for Policy, Planning and Development	2
PPD 554	Foundations of Public Policy Analysis	2
PPD 555	Public Policy Formulation and Implementation	4
PPD 557	Modeling and Operations Research	4
PPD 558	Multivariate Statistical Analysis	4
PPD 560	Methods for Policy Analysis	4
Public policy elective		4
Analytic elective (PPD 542, PPD 587, PPD 617 or PPD 647)		4

One management elective from the following list:	4
PPD 516 Financial Accounting for Health Care Organizations	
PPD 541 Public Financial Management and Budgeting	
PPD 545 Human Behavior in Public Organizations	
PPD 654 Information Technology Management in the Public Sector	
PPD 656 Political Management: Theory and Applied Techniques	
PPD 661 Intergovernmental Management: Local Perspective	
PPD 662 Intergovernmental Management: State Perspective	
PPD 675 Nonprofit Management and Leadership	
PPD 687 Strategic Management in the Nonprofit Sector	
PPD 690 Alternative Dispute Resolution	
	32

PLANNING	UNITS
PPD 524 Planning Theory	2
PPD 526 Comparative International Development	2
PPD 527 Social Context of Planning	2
PPD 529 Legal Environment of Planning	2
PPD 533 Planning History and Urban Form	2
Concentration electives in planning from the Price School (includes 4 units of methodology to be selected with adviser from the following list)	12
PPD 612 Research and Analytical Techniques	
PPD 616 Participatory Methods in Planning and Policy	
PPD 617 Urban Demography and Growth	
PPD 627 Design Skills for Urban Planners	
PPD 634 Institutional and Policy Issues in Transportation	
	22

Electives

Students are required to take 6 units of electives from the curriculum offered by the university. Non-Price School courses may be selected by the students with the approval of an academic adviser.

Practicum/Planning Studios

After finishing the core courses of both programs, students are required to take 8 units in practicum/planning studios: 4 units from the public policy program (PPD 561ab) and 4 units from the planning program (PPD 531L).

Comprehensive Exam and Internship

Dual degree students, like all other MPI students, must take a comprehensive examination and fulfill the internship requirement.

Master of Planning/Master of Social Work

The dual degree program between the USC School of Social Work and the USC Price School of Public Policy offers unique opportunities for students who want to devote their professional careers to social policy, social planning or social services delivery. Students with a dual degree will have broader employment options beyond those in traditional planning or social work.

The schedule of courses allows students to experience direct service in the first year so that course work planning is supplemented by a knowledge of consumers, service delivery, etc. Courses for both schools are taken simultaneously, intermingling social work and planning content. Two years of field practicums in social work provide in-depth exposure to social service issues from both planning and direct service perspectives, thus satisfying some of the planning laboratory/workshop requirements and eliminating the need for a separate planning internship requirement.

Requirements

Requirements for completion of the MSW/MPI degree are 83 units including 51 units in social work and 32 units in planning. Students must select a community organization, planning and administration concentration in the second year of their social work program.

SOCIAL WORK	UNITS
SOWK 503 Human Behavior and the Social Environment I	3
SOWK 505 Human Behavior and the Social Environment II	3
SOWK 534 Policy and Practice in Social Service Organizations	3
SOWK 543 Social Work Practice with Individuals	4
SOWK 545 Social Work Practice with Families, Groups and Complex Cases	2
SOWK 562 Social Work Research	3
SOWK 586ab Field Practicum	3-3
SOWK 587ab Integrative Learning for Social Work Practice	2-2
SOWK 599 Special Topics (approved by concentration)	3
SOWK 611* Leadership in the Social Work Profession and Organization: Theory and Practice	3
SOWK 629 Evaluation of Research: Community Organization, Planning and Administration	3
SOWK 648 Management for Community and Social Services	3
SOWK 686ab Field Practicum II	4-4

and one of the following:

SOWK 603 Merging Policy, Planning, and Research for Change in Families and Children's Settings	3
SOWK 636 Social Policy: Health Care	3
SOWK 672 Context and Policies of Social Work Practice in Work Environments	3

*Students who have taken a leadership course in PPD are not required to take SOWK 611.

PLANNING	UNITS
PPD 500 Intersectoral Leadership	2
PPD 501a Economics for Policy, Planning and Development	2
PPD 524 Planning Theory	2
PPD 525 Statistics and Arguing from Data	2
PPD 526 Comparative International Development	2
PPD 527 The Social Context of Planning	2
PPD 529 Legal Environment of Planning	2
PPD 533 Planning History and Urban Form	2
PPD 628 Urban Planning and Social Policy	4

Note: 2-unit courses may be offered in seven-and-a-half week blocks.

Planning Studios: PPD 531L (4) for 4 units.

Electives: 8 units of elective courses taken within the Price School of Public Policy.

Dual degree students, like all other MPI students, must take a comprehensive examination and fulfill the internship requirement.

Master of Public Policy/Juris Doctor

The Price School of Public Policy and the USC Gould School of Law offer a dual degree that enables qualified students to earn both a Juris Doctor and a Master of Public Policy in approximately four years of study.

The dual degree allows students to acquire a blend of the analytic skills of public policy and an understanding of legal institutions and processes. This combination of knowledge is well suited for law students who want to affect the policy-making process and craft legislation to aid in the achievement of public policy goals. It is equally appropriate for prospective policy analysts who are interested in law and public policy.

Students must apply to, and be accepted by, both schools. They may be accepted to the dual degree at the time of their acceptance to the law school or at the beginning of their second year of law school. Dual degree students spend the first year of the program completing the required first year of law school. The remaining units of law school courses and the required 36 units of core MPP courses are taken by students in the second through fourth years.

Students are required to complete 114 units of course work, 78 units in the law school and 36 units in the Price School of Public Policy. To earn the J.D., all students (including dual degree students) must complete 35 numerically graded law units at USC after the first year. The associate dean may make exceptions to this rule for students enrolled in law school honor programs. In addition, the MPP program has a statistics prerequisite. Please see the MPP degree in the Price School of Public Policy section of the catalogue for the requirements.

The required MPP courses are PPD 500, PPD 501ab, PPD 554, PPD 555, PPD 557, PPD 558, PPD 560, PPD 561ab; 4 units of a management elective (PPD 516, PPD 541, PPD 545, PPD 654, PPD 656, PPD 661, PPD 662, PPD

675, PPD 687 or PPD 690); and 4 units of an analytic elective (PPD 542, PPD 587, PPD 617 or PPD 647).

Master of Real Estate Development/Juris Doctor

The Juris Doctor/Master of Real Estate Development dual degree program provides the opportunity for in-depth study of legal issues and real estate development. The increasingly regulatory environment developers work within demands that professionals in the real estate industry have a strong understanding of the legal system. Lawyers who plan to specialize in real estate law will benefit from a thorough understanding of the development process, including financial, planning, marketing and design issues. Application must be made to both the USC Gould School of Law and the USC Price School of Public Policy. This program normally requires three years (including one summer) of full-time study in residence to complete.

Requirements for completion of the dual degree program are 112 units, including 78 units in law and 34 units in planning and development. To earn the J.D., all students (including dual degree students) must complete 35 numerically graded law units at USC after the first year. The associate dean may make exceptions to this rule for students enrolled in law school honors programs.

LAW SCHOOL		UNITS
LAW 502	Procedure I	4
LAW 503	Contracts	4
LAW 504	Criminal Law	3
LAW 505	Legal Profession	3
LAW 507	Property	4
LAW 508	Constitutional Law I	4
LAW 509	Torts I	4
LAW 512	Law, Language, and Ethics	3
LAW 515	Legal Research, Writing, and Advocacy I	2
LAW 516	Legal Research, Writing and Advocacy II	2
LAW electives including fulfillment of the upper division writing requirement and skills course		45
REAL ESTATE DEVELOPMENT		UNITS
PPD 500	Intersectoral Leadership	2
PPD 501a	Economics for Policy, Planning and Development	2
RED 509	Market Analysis for Real Estate	4
RED 542	Finance of Real Estate Development	3
RED 544	Real Estate Capital Markets	2
RED 546	Applications of Real Estate Finance to Problems of Development	3
RED 547	Project Management and Construction	2
RED 551	The Approval Process	4
RED 573	Design History and Criticism	2
RED 574	Building Typologies	2
RED 575L	Community Design and Site Planning	4
RED 598	Real Estate Product Development	2
Elective from the Price School of Public Policy		2

Students are required to complete a comprehensive examination administered by faculty members from both the law school and the Price School of Public Policy.

Students must have an approved laptop computer as required by instructors and must demonstrate calculator and spreadsheet skills.

Master of Real Estate Development/Master of Business Administration

The Master of Real Estate Development/Master of Business Administration dual degree program enables students to expand their skills in planning, land development, marketing, decision sciences, accounting, management, finance and economics. The program is targeted for students who have a clear career goal of becoming real estate developers but who lack formal training in business. The program normally requires two years (including summers) of full-time study in residence to complete.

Requirements

A total of 82 units is required. Required courses include: all required courses in an MBA program; FBE 565 Economics of Urban Land Use — Feasibility Studies (3 units); FBE 588 Advanced Real Estate Law (3 units); graduate business electives sufficient to bring the total units completed in the USC Marshall School of Business to at least 48; and Policy, Planning, and Development courses (34 units). Dual degree students may not count courses taken outside the USC Marshall School of Business toward the 48 units.

Students must have an approved laptop computer as required by instructors and must demonstrate calculator and spreadsheet skills.

REAL ESTATE DEVELOPMENT		UNITS
PPD 500	Intersectoral Leadership	2
RED 509	Market Analysis for Real Estate	4
RED 542	Finance of Real Estate Development	3
RED 544	Real Estate Capital Markets	2
RED 546	Applications of Real Estate Finance to Problems of Development	3
RED 547	Project Management and Construction	2
RED 551	The Approval Process	4
RED 573	Design History and Criticism	2
RED 574	Building Typologies	2
RED 575L	Community Design and Site Planning	4
RED 598	Real Estate Product Development	2
Elective from the Price School of Public Policy		4

Comprehensive Examination: Students are required to complete a comprehensive examination administered by faculty members from both the Marshall School of Business and the Price School of Public Policy.

Master of Public Administration/Master of Science in Gerontology

The Master of Public Administration/Master of Science in Gerontology (MPA/M.S.) dual degree offers students interested in management of agencies and institutions the opportunity to gain in-depth knowledge of

the administrative and organizational processes and management skills necessary for the effective delivery of services to older persons.

In the MPA/M.S. dual degree, students spend their first year taking the required courses in the USC Davis School of Gerontology. The research course, GERO 593 Research Methods and the capstone course GERO 555 Integrating Gerontology: A Multidisciplinary Approach, are taken in the USC Davis School of Gerontology. The student begins courses in the Price School of Public Policy during the second semester of the first year.

Two versions of this dual degree are available, one with a general orientation and one with an emphasis on health services administration. Students must apply to both schools and, if accepted to both, participate in a specially designed program combining course work from both schools.

Curriculum requirements for the general focus dual degree are detailed in the USC Davis School of Gerontology section of this catalogue. Students are encouraged to seek advisement as they plan their actual programs, since curriculum changes may occur.

GERONTOLOGY REQUIREMENTS		UNITS
GERO 510	Physiology of Development and Aging	4
GERO 520	Life Span Development Psychology	4
GERO 530	Life Span Development Sociology	4
GERO 540	Social Policy and Aging	4
GERO 550	Administration and System Management in Programs for Older Adults	4
GERO 555	Integrating Gerontology: A Multidisciplinary Approach	4
GERO 591	Field Practicum	8
GERO 593	Research Methods	4
Gerontology elective		4
		40

PUBLIC ADMINISTRATION REQUIREMENTS		UNITS
PPD 500	Intersectoral Leadership	2
PPD 501ab	Economics for Policy, Planning and Development	2-2
PPD 540	Public Administration and Society	4
PPD 541	Public Financial Management and Budgeting, or	
PPDE 645	Financial Management of Nonprofit Organizations	4
PPD 542	Policy and Program Evaluation, or	
PPD 557	Modeling and Operations Research, or	
PPD 666	Administrative Research and Analysis	4
PPD 545	Human Behavior in Public Organizations	4
PPD 546	Capstone in Public Administration	4
Elective		2
		28

Program Adaptation

For the M.S. in Gerontology, 12 units of electives are waived as well as GERO 589 Case Studies in Leadership and Change Management because students enrolled in this program have a primary professional focus in public administration. For the Master of Public Administration, 12 units of gerontology courses are used as the substantive specialization.

Master of Health Administration/Master of Science in Gerontology

Gerontology and health administration students can specialize in health care administration (profit and non-profit) through the dual degree with the USC Davis School of Gerontology and the USC Price School of Public Policy's Health Administration Program. Students in the dual degree program must be admitted by both academic units and complete 78 units of post-graduate academic work.

GERONTOLOGY REQUIREMENTS		UNITS
GERO 510	Physiology of Development and Aging	4
GERO 520	Life Span Developmental Psychology	4
GERO 530	Life Span Developmental Sociology	4
GERO 540	Social Policy and Aging	4
GERO 550	Administration and System Management in Programs for Older Adults	4
GERO 555	Integrating Gerontology: A Multidisciplinary Approach	4
GERO 591	Field Practicum	8
GERO 593	Research Methods	4
		36

HEALTH ADMINISTRATION REQUIREMENTS		UNITS
PPD 500	Intersectoral Leadership	2
PPD 501a	Economics for Policy, Planning and Development	2
PPD 509	Problems and Issues in the Health Field	4
PPD 510a	Financial Management of Health Services	4
PPD 513	Legal Issues in Health Care Delivery	2
PPD 514	Economic Concepts Applied to Health	4
PPD 515	Strategic Management of Health Organizations	4
PPD 516	Financial Accounting for Health Care Organizations	4
PPD 517	Concepts and Practices in Managing Health Care Organizations	2
PPD 518	Quality of Care Concepts	2
PPD 545	Human Behavior in Public Organizations	4
PPD 557	Modeling and Operations Research	4
PPD 601	Management of Long-Term Care Organizations	4
		42

Statistics: The statistics requirement for dual degree students is the same as those that apply to the Master of Health Administration (see page 880xx).

Program Adaptation: The USC Davis School of Gerontology will waive GERO 589 Case Studies in Leadership and Change Management because students enrolled in this program will have a primary professional focus in health administration.

Students enrolled in the dual degree are not required to take PPD 511 (as opposed to the stand alone MHA degree students) because they develop the necessary proficiencies related to their career goals in long term care administration through other courses such as GERO 550, GERO 591 and GERO 593. In addition, PPD 601 is required for the dual degree (and not the stand alone MHA program) because most of these students will work in long-term care facilities and this course is critical for success in that market.

Any course substitutions are done by petition on an individual basis and should be part of a carefully developed course of study. The USC Price School of Public Policy should be consulted concerning this program of study.

Master of Public Administration/Juris Doctor

The dual degree program with the USC Gould School of Law and the USC Price School of Public Policy enables qualified students to earn a Juris Doctor/Master of Public Administration (J.D./MPA) in approximately four years of study.

Some of the topics covered in the law school are also covered in the program of the Price School of Public Policy, so some credit toward the law degree may appropriately be given for specified graduate work taken in the Price School of Public Policy. Similarly, some credit toward the master's degree may appropriately be awarded for certain work completed in the law school.

The goal of the program is to encourage law students to gain a recognized competence in administration, which has a direct relevance for the roles lawyers are asked to play in society.

Students must apply to, and be accepted by, both schools. They may be accepted to a dual degree program at the time of their acceptance to the law school or at the beginning of their second year of law school. The program requires the completion of the required first year of law school and the fulfillment of a statistics prerequisite, which can be met by passing an undergraduate inferential statistics class with a grade of B or better at an approved university within three years of matriculation or taking PPD 502x Statistical Foundations for Public Management and Policy and completing with a grade of "B" or better. To earn the J.D., all students (including dual degree students) must complete 35 numerically graded law units at USC after the first year. The associate dean may make exceptions to this rule for students enrolled in law school honors programs.

Credit toward the law degree may not be given for graduate work completed prior to the completion of the first year of law school. The Price School of Public Policy, on the other hand, may allow some credit toward the MPA for approved work completed prior to the first year of law school.

Students are required to complete 97 units of course work.

Curriculum Requirements

First Year Required law school courses

Second and Third Year The remaining 39 units of law school courses, 32 additional units of public administration courses. These courses are from the MPA core (PPD 500, PPD 501ab, PPD 540 and PPD 546) and management competencies (PPD 542 or PPD 557 or PPD 666, PPD 541 or PPDE 645, PPD 545) and 6 units of PPD electives.

Master of Public Administration/Master of Social Work

The Master of Public Administration/Master of Social Work (MPA/MSW) dual degree offers students interested in careers as administrators of social agencies the opportunity to prepare for social work while developing the administrative capabilities necessary in the public sector.

The MPA/MSW requires two calendar years of full-time study. The first academic year is devoted to the standard social work first year curriculum. During the second year, the curriculum combines social work and public administration course work. The curriculum for both summers will be in public administration.

Students can enter this program only with the written consent of both schools. Students who apply initially to the USC School of Social Work must declare their intention to pursue the MPA/MSW dual degree at the time of their application. If admission is approved, such students will be admitted to the dual degree program. Social work students selecting this program are required to select the Community Organization, Planning and Administration concentration in their second year program.

Students must complete 82 units (54 in social work and 28 in public administration).

SOCIAL WORK (54 UNITS)		UNITS
SOWK 503	Human Behavior and the Social Environment I	3
SOWK 505	Human Behavior and the Social Environment II	3
SOWK 534	Policy and Practice in Social Service Organizations	3
SOWK 535	Social Welfare	3
SOWK 543	Social Work Practice with Individuals	4
SOWK 545	Social Work Practice with Families, Groups and Complex Cases	2
SOWK 562	Social Work Research	3
SOWK 586ab	Field Practicum	3-3
SOWK 587ab	Integrative Learning for Social Work Practice	2-2
SOWK 599	Special Topics (approved by concentration)	3
SOWK 611*	Leadership in the Social Work Profession and Organizations: Theory and Practice	3
SOWK 629	Evaluation of Research: Community Organization, Planning and Administration	3
SOWK 639	Social Policy for Managers, Planners, and Community Organizers	3

SOWK 648	Management for Community and Social Services	3
SOWK 686ab	Field Practicum II	8
<i>*Students who have taken a Price leadership course are not required to take SOWK 611.</i>		

PUBLIC ADMINISTRATION (28 UNITS)		UNITS
PPD 500	Intersectoral Leadership	2
PPD 501ab	Economics for Policy, Planning and Development	2-2
PPD 540	Public Administration and Society	4
PPD 541	Public Financial Management and Budgeting, or	
PPDE 645	Financial Management of Nonprofit Organizations	4
PPD 546	Capstone in Public Administration	4
PPD electives**		10

****Electives in public administration need to be approved by the graduate adviser in the Price School of Public Policy.**

Master of Public Administration/Master of Arts in Jewish Nonprofit Management

The Master of Public Administration/Master of Arts in Jewish Nonprofit Management (MPA/M.A.) has been developed, in cooperation between the USC Price School of Public Policy and the HUC-JIR School of Jewish Nonprofit Management, to prepare those students who want to make a career in Jewish nonprofit management. Students receive a solid academic and experiential foundation in the American Jewish experience — its history, culture and structure — combined with the theory and practice of community organization and administration.

Students must complete 88 units of course work, 36 in public administration, and must serve two academic years in supervised fieldwork. There is an opportunity to spend either 12 months in Sacramento, California, or Washington, D.C. At these sites, students attend classes while serving internships in the offices of politicians, lobbyists or other advocates.

Students must meet admission requirements and be admitted by both the Price School of Public Policy and HUC-JIR's School of Jewish Nonprofit Management (formerly the HUC-JIR School of Jewish Communal Service).

Curriculum Requirements

The program begins in June of each year and continues for the next 24 months. Students are expected to work out individual course plans with advisers from each school.

In addition to applying to the Price School of Public Policy, those interested in the program should contact

the Office of Admissions, Hebrew Union College — Jewish Institute of Religion, 3077 University Avenue, Los Angeles, CA 90007-3796, for comprehensive information about its requirements.

Public administration course work may be taken in Los Angeles or Sacramento. In Sacramento, a student will complete the Price core and elective courses, will take independent study with an HUC professor, and will serve in an internship while enrolled in HUC fieldwork classes.

PUBLIC ADMINISTRATION REQUIREMENTS		UNITS
PPD 500	Intersectoral Leadership	2
PPD 501ab	Economics for Policy, Planning and Development	2-2
PPD 540	Public Administration and Society	4
PPD 541	Public Financial Management and Budgeting, or	
PPDE 645	Financial Management of Nonprofit Organizations	4
PPD 545	Human Behavior in Public Organizations	4
PPD 546	Capstone in Public Administration	4
PPD electives*		14

AN ELECTIVE IS DEFINED AS ONE OF THE FOLLOWING COURSES:

PPD 516x	Financial Accounting for Health Care Organizations	4
PPD 668	Entrepreneurship and the Public Sector	4
PPD 675	Nonprofit Management and Leadership	4
PPD 689	The Nonprofit Sector and Philanthropy	4

**Two of the above electives and an additional 6 units of elective classes offered within the Price School must be taken. Substitutions for the two electives may be requested by petition to the graduate adviser in the Price School of Public Policy.*

Fieldwork Requirement

Throughout the program, students are expected to serve in supervised internships. Fieldwork is administered cooperatively by the faculties of HUC-JIR School of Jewish Nonprofit Management and the Price School of Public Policy.

Program Adaptation

Students enrolled in the dual degree are not required to take a research methods course (PPD 542, PPD 557 or PPD 666) in the MPA program (as opposed to the stand alone MPA degree students) because they develop the necessary proficiencies in research methods

in the course offered in the HUC-JIR School of Jewish Nonprofit Management (CS 562 Jewish Social Research: Trends and Analysis). Students in the dual degree may elect an alternative four units within the Price School.

Regulations Concerning a Second Master's Degree

For rules governing a second master's degree, see page 88xx of this catalogue. In accordance with these policies, transfer credits will be granted only on the basis of a written petition to the MPA program coordinator and on the basis of credits recognized by USC in a Transfer Credit Statement.

Teaching Opportunities

Students may want to prepare for teaching as well as for public service. By careful planning in the upper division of the undergraduate degree and during the graduate years, requirements for a bachelor's degree, a master's degree and the university recommendation for a community college instructorship may be met without unnecessary duplication of effort and waste of time. Those interested in teaching should consult advisers in both the USC Price School of Public Policy and the USC Rossier School of Education before beginning upper division and graduate work.

Public Administration Professional Sequence with the Viterbi School of Engineering

Regulations governing the Master of Science in Civil Engineering permit some candidates for this degree to take 12 units outside the School of Engineering. Those who wish to do so may take 12 units in public administration. Two courses in this sequence must be selected from among PPD 500, PPD 501ab, PPD 540, PPD 541, PPD 545, PPD 546. One course in this sequence must be selected from among PPD 542, PPD 557, PPD 666. PPD 541 requires PPD 502x and statistics as prerequisites. PPD 546 should be taken last if elected.

Joint Degree Programs

Master of Long Term Care Administration

This program is designed to prepare competent individuals to administer the long term care needs of America's elderly population. It is jointly offered by the Davis School of Gerontology, the Marshall School of Business, and the Price School of Public Policy. For information see the USC Davis School of Gerontology, page 705xx.

Master of Science in Health Systems Management Engineering

For information, see Industrial and Systems Engineering, page 665xx.

Doctoral Degrees

The USC Price School of Public Policy offers the Doctor of Philosophy in Public Policy and Management (Ph.D.), the Doctor of Philosophy in Urban Planning and Development (Ph.D.) and the Doctor of Policy, Planning, and Development (DPPD). The Ph.D. degrees are designed to prepare individuals for university level teaching and

research. The DPPD degree is intended to develop a high level of conceptual and research competence for professional leadership in planning and development. The DPPD is administered by the Price School of Public Policy; the Ph.D. programs are administered by the Graduate School and the faculty of the Price School of Public

Policy. Ph.D. students must consult the Graduate School section of this catalogue for regulations and requirements pertaining to its degrees. Students should also consult the Academic Policies section of this catalogue.

Completion of the requirements for all these degrees is assumed to take a minimum of three years of

approved graduate study and research beyond the bachelor's degree. For the Ph.D. student, a minimum of 24 graduate units completed in residence on the University Park Campus in Los Angeles is required. DPPD students are required to complete a minimum of 24 units at the University Park Campus. Full-time study is represented by enrollment in 6 units during the semester. Usually the school and the student's qualifying exam committee insist on a clear and mutually understood commitment of time and energy by the student to ensure significant involvement in the doctoral learning experience. For university policies regarding continuous enrollment, leave of absence and readmission, see pages 88-89xx.

Application and Admission

Admission to graduate standing for the Ph.D. or DPPD is recommended by the school's admissions committee acting under guidelines established by the Graduate School as outlined in the Graduate School section, page 97xx, and the Graduate Admission section, page 80xx. In addition to those guidelines, DPPD students are expected to have a minimum of five years of substantial relevant experience. Students intending to apply should direct questions about the program and all materials for the admission application to Doctoral Programs, Office of Student Affairs, RGL 111, Price School of Public Policy, University of Southern California, University Park, Los Angeles, CA 90089-0626.

The deadline for applications for admission to the Ph.D. and DPPD programs is December 1. Applications for admission are made once each year for fall semester admission.

The admission decision for Ph.D. students is made using criteria which include verification that the applicant has a bachelor's degree from an accredited college or university, has maintained a high grade point average in the last 60 units of undergraduate work, and has earned a competitive score on the verbal and quantitative portions of the Graduate Record Examinations (GRE). Other elements of the applicant's educational and experiential background are also evaluated, including performance in other advanced degrees. DPPD applicants must also provide evidence of at least five years of practical administrative or other relevant experience. The GRE and GMAT scores are neither accepted nor required for the DPPD program.

Each applicant should submit the following: (1) one copy of official transcripts of all previous college and university work (be sure that these official transcripts show an awarded degree where appropriate); (2) copies of GRE scores; (3) a 1,000-word essay discussing the applicant's background and reasons for wanting to pursue a Ph.D. degree and identifying his or her personal, educational and professional goals; (4) an up-to-date resume, including academic and professional accomplishments; (5) three letters of recommendation, two from previous instructors, the other from an instructor or from a professional supervisor or colleague. The letters should indicate the applicant's academic and professional accomplishments and potential; (6) a completed USC Graduate Admission Application, along with the nonrefundable application fee; (7) a writing sample of approximately 1,000 words (in addition to the applicant essay); and (8) a completed Price School of Public Policy Supplemental Graduate Application.

International applicants are asked to submit additional information. Applicants should carefully choose, and clearly state, the degree objective (Ph.D. or DPPD) for which they are applying, since different sets of admissions criteria exist for each of them.

Transfer Credits

The application of any available transfer credits toward a graduate degree at USC will be determined by the faculty and the dean of the Price School of Public Policy, based on the semester units available for transfer as shown in the Transfer Credit Statement (determined by the USC Office of Academic Records and Registrar). Refer to Admission with Advanced Standing, page 906xx, for more information.

Deferral of Enrollment

Admission to the university is granted for a specified semester, and it is expected that students will begin their programs during that semester. The school will normally allow students to defer their enrollment up to one year from the admission semester. Students who wish to defer enrollment should notify the school in writing no more than 30 days after the beginning of the semester of admission. Students who do not inform the school in a timely manner of their intent to defer enrollment may be required to reapply for admission.

Please note that more stringent regulations apply to international students. See the Admission section of this catalogue, page 81xx.

Admission to Candidacy

Acceptance to graduate standing does not in itself imply that the student is admitted or will be admitted to candidacy for an advanced degree. Application for admission as a candidate for an advanced degree is a separate and subsequent step. See the Graduate School section of this catalogue, page 97xx.

Admission of International Students

All international applicants for admission to doctoral programs should submit materials to Doctoral Programs, Recruitment and Admissions Office, RGL 111, Price School of Public Policy, University of Southern California, University Park, Los Angeles, CA 90089-0626. See the Admission of International Students section of this catalogue, page 81xx.

Screening

Ph.D. students are required to have a 3.3 overall G.P.A. in first-year courses to continue in the program. DPPD students are required to pass a screening procedure after 16 units of course work. The procedure is designed to ensure that only those students who have demonstrated intellectual and scholarly potential continue in the program.

There are differences between the screening process for Ph.D. and DPPD students. Students should consult the relevant faculty director of the doctoral program in which they are enrolled.

Qualifying Exam Committee (for the Ph.D. programs)

A qualifying exam committee assists the student in outlining an academic program leading toward the degree. Students will form an initial qualifying exam

committee by the end of the first fall semester. The committee might not yet include the Graduate School representative from outside the Price School, but must include at least three tenure track the Price School faculty members, one of whom is identified as the chair. This committee bears responsibility for counseling the doctoral student, for approving a course schedule and preliminary and qualifying examinations, and for recommending the student for admission to candidacy. After approval of the student's program and proposed time schedule, the program is submitted in writing to the relevant director. This should be accomplished by the beginning of the second year, following successful screening.

The complete qualifying exam committee must be in place no later than the third semester. The chair should have recognized expertise in the qualifying area and should be a regular participant in the qualifying examination committee for that area. The majority of the members of the qualifying exam committee (typically at least three out of five) should be experts in the area in which the student is qualifying and should be regular participants in the qualifying examination committee. The remaining members should have a clear interest in this area with the exception of the outside member whose primary responsibility is to serve as the representative of the Graduate School, ensuring the university's commitment to the equitable treatment of all students and that the highest quality education standards are upheld.

Students will formalize their relationship with their committees through the development of a work plan which specifies all courses, degree progress, seminar attendance and what was learned from these sessions as well as a research plan that articulates major research questions being explored. At the end of the first year of study, the qualifying exam committee chair reviews and approves the work plan. At the end of the second year, the full qualifying exam committee reviews the work plan and the second year paper.

Doctor of Philosophy in Public Policy and Management Doctor of Philosophy in Urban Planning and Development

The Price School offers two Ph.D. programs. Both the Doctor of Philosophy (Ph.D.) in Public Policy and Management and the Doctor of Philosophy (Ph.D.) in Urban Planning and Development degree programs are under the jurisdiction of the Graduate School. Students should also refer to the Graduate and Professional Education, page 79xx, and Graduate School, page 97xx, sections of this catalogue for general regulations. All courses applied toward the degrees must be courses accepted by the Graduate School.

The Ph.D. programs in the Price School both emphasize rigorous programs of advanced study and research, stressing qualitative or quantitative analysis and the theoretical foundations of their field of study. The programs are designed to provide students with the opportunity to develop their own specialization and expertise in either major field — public policy and management or urban planning and development — while also offering them a breadth of knowledge in an especially rich intellectual environment.

Curriculum Requirements

The Doctor of Philosophy in Public Policy and Management and the Doctor of Philosophy in Urban Planning and Development are administered by the doctoral committee of the school. The Ph.D. program in Public Policy and Management requires the completion of 60 units of course work, comprising the following elements: master's core in a substantive field (15–17 units), theoretical core (11–12 units), methodology (10–12 units), field/specialization courses (12 units), teaching seminar (2 units), research seminar (4 units) and dissertation (4 units minimum). The Ph.D. program in Urban Planning and Development requires the completion of 60 units of course work, comprising the following elements: master's core (14–16 units), doctoral core (8 units), methodology (10–12 units), field/specialization courses (16 units), teaching seminar (2 units), research seminar (4 units), and dissertation (4 units minimum).

Ph.D., Public Policy and Management Core Curriculum

THEORETICAL CORE (11–12 UNITS)*		UNITS
PPD 711	Theoretical Foundation of Public Management	4
PPD 712	Seminar in Public Policy	4
PPD 715*	Political Economy and Institutional Analysis	4

*Students may petition to substitute PPD 715 with a different theory course derived from a discipline. Examples include MOR 602, ECON 500 or ECON 503, etc.

METHODOLOGY (10–12 UNITS)		UNITS
PPD 706	Paradigms of Research and the Design of Inquiry	4
PPD 558	Multivariate Statistical Analysis, or	
ECON 513	Practice of Econometrics	4
One additional methods course selected with qualifying exam committee approval		2–4

Field Courses (12 units)

Students select 12 units of field courses which can be used to develop disciplinary expertise related to specialization interest or additional methodological expertise. Fields are developed with qualifying exam committee approval, can include any combination of the Price School and outside courses and are unique to each student.

Research Seminar (4 units)

Students will take PPD 710ab (2 units each, 4 total units), the Price School research seminar course.

Teaching Seminar (2 units)

Students will take two semesters of the teaching seminar, PPD 700ab (1 unit each, 2 total units).

Students entering the doctoral program without a relevant master's degree in public administration or public policy or a related field will be required to complete prerequisites (15–17 units) relevant to their program.

For the Ph.D. in Public Policy and Management, possible courses include:

PPD 500	Intersectoral Leadership	2
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PPD 501ab	Economics for Policy, Planning and Development	2–2
PPD 525	Statistics and Arguing from Data	2
PPD 540	Public Administration and Society	4
PPD 542	Policy and Program Evaluation	4
PPD 555	Public Policy Formulation and Implementation	4

Ph.D., Urban Planning and Development Core Curriculum

THEORETICAL CORE (8 UNITS)		UNITS
PPD 713	Advanced Planning Theory	4
PPD 714	Advanced Urban Development	4

METHODOLOGY (10–12 UNITS)		UNITS
PPD 706	Paradigms of Research and the Design of Inquiry	4
Two additional methods courses selected with qualifying exam committee approval		6–8

Specialized Field Courses (16 units)

Students take a minimum of four courses to develop their specialized area of study. Courses may be taken in the Price School or other USC units. Students, working with their qualifying exam committees, have considerable flexibility in forming specializations.

Research Seminar (4 units)

Students will take PPD 710ab (2 units each, 4 total units), the Price School research seminar course.

Teaching Seminar (2 units)

Students will take two semesters of the teaching seminar, PPD 700ab (1 unit each, 2 total units).

Students entering the doctoral program without a relevant master's degree in urban planning or a related field will be required to complete prerequisites (16–18 units) relevant to their program.

For the Ph.D. in Urban Planning and Development, possible courses include:

PPD 500	Intersectoral Leadership	2
PPD 501ab	Economics for Policy, Planning and Development	2–2
PPD 524	Planning Theory	2
PPD 525	Statistics and Arguing from Data	2
PPD 526	Comparative International Development	2
PPD 527	The Social Context of Planning	2
PPD 533	Planning History and Urban Form	2
PPD 634	Institutional and Policy Issues in Transportation	4

Admission with Advanced Standing

Students entering the doctoral program with a master's degree from an accredited institution in public management/administration, public policy, planning, or urban development or related field may be admitted with advanced standing to either Ph.D. program. In the Public Policy and Management program, students must complete a minimum of 39–41 units of doctoral classes

beyond that graduate degree, exclusive of 794ab doctoral dissertation units, for a minimum of 43–45 semester units. In the Urban Planning and Development program, students must complete a minimum of 40–42 units of doctoral classes beyond that graduate degree, exclusive of 794ab doctoral dissertation units, for a minimum of 44–46 semester units. Additional course work may be required if deemed necessary by the student's faculty following the screening examination.

A maximum of 6 units of transfer credit may be applied toward a doctoral degree with advanced standing. Only course work not used to complete the master's degree described above is available for transfer credit. No exceptions are allowed.

Qualifying Exam Committee

Students will form an initial qualifying exam committee by the end of the first fall semester, which officially oversees the development of the student's academic program through the qualifying examination. Five tenure or tenure track committee members are designated to provide guidance in the field developed by the student. A minimum of three members, including at least one tenured member, must be from among the faculty participating in this Doctor of Philosophy program, and at least one member must be from outside the Price School of Public Policy. Students should refer to the Graduate School section, page 102xx, regarding the qualifying exam committee and the outside member. The complete qualifying exam committee must be in place no later than the third semester.

Screening Procedures

Students must have a 3.3 overall GPA in first-year courses to continue in the program.

Work Plans

At the end of each spring semester, the student submits an academic work plan for the coming year to his or her qualifying exam committee chair. The plan should include courses, degree progress, seminar attendance and what was learned from those, and a research plan that articulates the major research questions being explored. At the conclusion of year one, the chair reviews and approves the work plan and at the end of year two, the chair reviews the work plan and the second year paper.

Qualifying Examination

The qualifying exam committee prepares a comprehensive written examination covering the fields of study. Following completion of the written portion, the entire committee conducts an oral examination of the student, focusing on material both complementary and supplementary to the written examination but relevant to the field and overall program selected by the student. Upon passing both portions of the qualifying examination, the student becomes a candidate for the Doctor of Philosophy degree. The qualifying exam will occur in the fall of year three.

Proposal Defense

Students are expected to have a proposal defense within one year of passing the qualifying exam.

Doctoral Dissertation

The dissertation is based on original research. The research is supervised by a dissertation committee of three or more regular USC faculty, at least one of whom must be from outside the Price School of Public Policy. A two-semester minimum registration in PPD 794 is required of all candidates. Students must maintain continuous registration until completion of the dissertation.

Defense of the Dissertation

Oral defense of the dissertation before the dissertation committee is usually made on a preliminary draft.

Format for Theses and Dissertations

All theses and dissertations submitted in fulfillment of requirements for graduate degrees must conform to university regulations with regard to format and method of preparation. Regulations for Format and Presentation of Theses and Dissertations is available from the Graduate School, Grace Ford Salvatori 315, or online at the Graduate School Website.

General Requirements

Refer to the Graduate School, page 97xx, section in this catalogue for policies regarding time limits, leave of absence, scholarship standing and probation.

Doctor of Policy, Planning, and Development

Planning and development are critical concerns of the nation and the world today. Whether redesigning the health care system, reproducing economic innovation in our central cities, or facilitating economic and social relationships across the globe, planners and developers are on center stage.

Leading the way into the next century will be a group of experienced practitioners who have updated and expanded their professional achievements by developing additional conceptual and research competency through the Doctor of Policy, Planning, and Development (DPPD).

The goals of the program are: to create a unique educational environment that will forge these professionals into a cadre for urban change; to develop urban professionals who can merge development and planning tools to design new integrative policy planning and implementation systems; to establish a set of new problem solving paradigms for examining and altering planning and development decision-making and to equip professionals with sophisticated analytical tools and a sharper cultural awareness so they can practice planning and development anywhere in the world.

Admission

The program is intended for people with considerable professional experience and intellectual interests. Requirements for admission include: GPA of 3.0 (A = 4.0) for all post-high school academic work, and, for international students, submission of TOEFL or IELTS scores; five letters of recommendation, including at least one academic and one professional; five or more years of professional experience; a resume and, if appropriate, a portfolio; and a study prospectus detailing a proposed field of study. Guidelines for preparing the prospectus are included in the application package. Additional

requirements for international students are listed under Admission of International Students, page 81xx. The GRE and GMAT are neither accepted nor required for the DPPD program. Each application will be examined with the aim of admitting an applicant whose study prospectus suggests the ability and focus to produce an innovative approach to professional practice.

Applicants are expected to hold a master's degree in architecture, landscape architecture, public administration, real estate development, urban/city/regional planning, urban design or a closely related field. Applicants with master's degrees in other fields will be expected to complete foundation courses prior to entering the degree's core classes.

Upon admission to the program, each student will be assigned a faculty adviser who will oversee his or her program.

Curriculum Requirements

The Doctor of Policy, Planning, and Development is administered by the Price School of Public Policy for full-time and part-time students. The DPPD requires completion of 60 units of course work comprising the following elements:

REQUIREMENTS	UNITS
Foundation courses	20
Core courses	8
Methods course	4
Field of study	20
Conspectus preparation	4
Planning, design and development project	(minimum) 4

Foundation Courses

Up to 20 units of foundation courses are required. These courses may be taken from the school's master's degree programs or, with prior approval, from other USC graduate degree programs. Students who hold a related master's degree may be admitted with advanced standing. Students are required to complete 36 units of course work and 4 units of PLUS 694 (project units).

REQUIRED COURSES	UNITS
Core Courses	
PLUS 603 Planning and Development Paradigms	4
PLUS 623 Politics of Planning and the Urban Environment	4
Conspectus Preparation	
PLUS 692 Conspectus Preparation	4

Methods

A student's methods course should be approved by the student's Professional Advisory Committee. Possible courses include:

PLUS 612 Analysis of Quantitative Data for Planning and Development	4
PPD 627 Design Skills for Urban Planners	4
PPD 632 Planning Analysis and Evaluation	4
PPD 707 Survey Research Methods	4
PPD 708 Qualitative Methods	4

Screening Process

As quickly as possible, the student will form a Professional Advisory Committee consisting of the student's adviser and two other school and/or USC faculty and up to five professionals whose activities are related to the student's. This committee shall oversee the student's program to its conclusion.

At the completion of no more than 16 units beyond the foundation courses and/or PLUS 603 and PLUS 623, students will complete a written examination which will consist of responding to a short list of specific planning and development problems using appropriate professional paradigms. The student will then meet with the Professional Advisory Committee to formally review the student's progress toward the degree.

Field of Study

In consultation with their faculty adviser and Professional Advisory Committee, students will craft a field of study related to the professional arena of practice. The field may or may not reflect standard academic boundaries, such as transportation and land use planning. Students should take advantage of USC's resources in developing the field, especially taking into consideration the relationship of practice to theory and context. Twenty units of course work are required for the field of study, 8 of which may be taken outside the Price School of Public Policy.

Conspectus Preparation

In PLUS 692 students complete a professional conspectus that defines their field of study, its structure and place within professional practice, and other related questions. The conspectus will be presented to the student's Professional Advisory Committee for acceptance. Only after it is accepted may the student proceed to the Planning, Design and Development Project.

Planning, Design and Development Project

The capstone project of the DPPD is the student's completion of the Planning, Design and Development Project (PDDP). The PDDP is a study of an aspect, site, issue or other such element of professional practice. Each PDDP should be designed to present an innovative or original contribution to the practice of planning and development. The parameters of the PDDP are intentionally left wide, allowing the project to be produced as solely text, or text in conjunction with film, computer program, design or another multimedia format.

The PDDP is supervised by the student's Professional Advisory Committee. Students must maintain continuous registration in the PLUS 694 series until completion of the PDDP. Upon completion of an approved draft of the PDDP, students will present their findings in an open session, but the Professional Advisory Committee is the sole evaluator.

General Requirements

This degree is administered by the Price School of Public Policy. At least 24 units must be fulfilled in residence at USC. The total length of the study must not exceed six academic years. Students are encouraged to actively participate in a non-credit Price School of Public Policy doctoral workshop. Policies regarding time limits, leave of absence, scholarship standing, academic warning, and other issues not directly addressed are consistent

with those of the Graduate School. Please consult the Academic Policies (page 29xx), Graduate and Professional Education (page 79xx) and Graduate School (page 97xx) sections for additional information.

Courses of Instruction

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

HEALTH CARE MANAGEMENT (HMG)

HMG 510 The Dynamics of Health Care Leadership

(4) A five-day residential provides an intensive, multi-faceted learning experience in leadership, communication, managed care, systems thinking, and the health care environment. Open to EMHA students only.

HMG 520 Leading People and Health Care Organizations

(4, Fa) An exploration of contemporary work force issues and skills development in organizational design, performance measurement, teamwork, conflict resolution, leadership, and change management. Open to EMHA students only.

HMG 525 Managed Care Operations

(4) Focuses on managerial, operational, and organizational aspects of managed care for integrated delivery systems, health plans, and medical groups. Open to EMHA students only.

HMG 540 Health Economics, Financing and Reimbursement

(2, Fa) Provides a framework for the economic analysis of health care issues and provides students with an opportunity to apply economic methods to a number of actual health care problems. Open to EMHA students only.

HMG 545 Systems Thinking and the Analysis of Data

(4) Quality improvement and statistical tools for health managers. Covers analyzing processes; collecting and analyzing operational data; drawing valid conclusions from data. Open to EMHA students only.

HMG 550 Law, Regulation, and Ethics

(4) An intensive introduction to business and health care law, ethics and regulation; gives executives practical knowledge regarding legal consideration in business transactions. Open to EMHA students only.

HMG 560 Customer-Focused Health Care Organization

(2) Strategies for gaining and using customer-derived data in planning, marketing and managing health care organizations. Open to EMHA students only.

HMG 565 Managing the Organization's Financial Health

(4, Fa) Executives confront and solve problems requiring use of accounting, finance, and management control principles; provides core financial skills for non-finance professionals. Open to EMHA students only.

HMG 570 Strategic Management

(4, Sm) Provides skill development and application in the integrative discipline of strategic management including assessment, strategy formulation, implementation and control. Open to EMHA students only.

HMG 575 Managing and Improving Health

(4, Sp) Methods for monitoring and improving the health of populations. Topics include outcomes management, risk-adjustment, development and implementation of practice guidelines. Open to EMHA students only.

HMG 600 Managing Risk

(2, FaSp) Overview of reimbursement models in clinical and institutional settings; legal, financial and clinical assumption of risk pursuant to new and evolving federal and state statutory and regulatory provisions. Open only to EMHA students.

HMG 601 Operations Management for Accountability

(4, FaSp) Hospital operations in the inpatient/outpatient setting; special emphasis on the growing requirement to more effectively manage across the continuum of care while assuming greater accountability in the delivery of care. Open only to EMHA students.

HMG 602 Operational Efficiency Processes in Health Care Organizations

(2, FaSp) Improving productivity and efficiency of health care organizations combining the application of key operational analysis principles to improve quality, speed and productivity in the delivery of health care. Open only to EMHA students.

HMG 603 Developing and Monitoring of Quality and Patient Safety Outcomes

(2, Sm) Overview of contemporary methods used to develop and monitor patient quality and safety outcomes; develop skill in data collection and analysis of clinical care outcomes; focus on operationalizing outcomes that matter to payers, organizations, and clinicians. Open only to EMHA students.

URBAN AND REGIONAL PLANNING (PLUS)

PLUS 600 Environmental Goods in Planning and Development

(4, Irregular) Production, distribution, and valuation of environmental goods with attention to amenity concepts, externalities, public goods, consumer behavior; as characterized in economics, political science, sociology, psychology.

PLUS 601 Advanced Planning Theory I

(4, Fa) Value hierarchies, means-ends continuums, and the nature of social action; problems of prediction and choice under conditions of uncertainty; alternative planning strategies.

PLUS 603 Planning and Development Paradigms

(4, Sp) Introduction to historic, prevalent, and alternative paradigms of professional planning and development practice; seminar format and case studies.

PLUS 612 Analysis of Quantitative Data for Planning and Development

(4, Fa) Planning and development case study approach to identifying data needs, acquisition, evaluation, manipulation, analysis, and multimedia presentation. *Prerequisite:* PPD 525.

PLUS 615 Behavioral Issues in Environmental Design

(4, Irregular) Planning and design of the physical environment for human activities, e.g., user preferences, privacy, territoriality, stress and adaptation, cognitive mapping, lifestyles.

PLUS 623 Politics of Planning and the Urban Environment

(4, Sp) Historic roots of property rights and obligations related to public policy, focus on current issues and discourse.

PLUS 626 Information Systems for Planning and Development

(4, 2 years, Sp) Structure, content, and applications of formal information systems in planning and policy making emphasizing social accounts and indicators, censuses, social reporting, and "futures" research.

PLUS 631 Seminar in Physical Planning and Design in Developing Countries

(4, Irregular) Issues in comparative urbanism; planning and design in developing countries: slums and squatters, housing and infrastructure, new towns, land policy, conservation and redevelopment, city design.

PLUS 632 National Urban Policy in Developing Countries

(4, Irregular) The problems of the primate city, the role of intermediate cities, and the implicit spatial impacts of macro and sectoral policies.

PLUS 633 Seminar in Comparative Housing Policy and Urban Planning Programs

(4, Irregular) Comparative examination of urbanization experience in selected areas and cities throughout the world; housing policies, urban planning approaches, financial, administrative, legal, and other techniques.

PLUS 635 Urban Finance

(4, Irregular) The theory of fiscal federalism and municipal finance, with examples from the USA and other countries, public/private partnerships in urban development, and government decentralization.

PLUS 640 International Urban Development

(4, Irregular) Study of urbanization in developing countries; special attention to urban growth, migration, city size, land use, and urban management. Comparative case studies.

PLUS 680 Advanced Urban and Regional Transportation Planning

(4, 2 years, Fa) Social and environmental impacts; incentive structures; alternate travel; investment guidelines; technological change.

PLUS 692 Conspectus Preparation

(4, FaSpSm) Preparation of a case study of a specific planning and/or development project that defines the student's field of study.

PLUS 694abcdz Planning, Design and Development Project

(2-2-2-2-0, FaSp) Credit on acceptance of planning, design and development project. Graded IP/CR/NC.

POLICY, PLANNING, AND DEVELOPMENT (PPD)

PPD 100m Los Angeles, The Enduring Pueblo (4, FaSp) Gateway to the minor in Planning and Development. Ethnic history of Los Angeles, emphasis placed on architecture, planning, and development. Multiplicity of cross-connections shaped by race, ethnicity, religion, gender, and sexual orientation. (Duplicates credit in former PLDV 100.)

PPD 225 Public Policy and Management (4, FaSp) Institutions, legal context, and processes of public policy and management. Contemporary theories of public policy formulation, implementation, and evaluation. Public managerial challenges and reforms.

PPD 227 Urban Planning and Development (4, FaSp) Gateway to B.S., Public Policy, Management and Planning and minor in Planning and Development. City building and development process; who plans, politics of planning and development; major topics include land use, fiscal policy, transportation, sustainability, and economic development.

PPD 240 Citizenship and Public Ethics (4, Fa, Sp) Review of legal and ethical traditions of citizenship with emphasis on the latter; consideration of implications for current practice of public policy-making and management. (Duplicates credit in former PPMT 240.)

PPD 245 The Urban Context for Policy and Planning (4, Fa) The urban context for planning and policy decisions. Socioeconomic, physical, and spatial structure of cities; and the underlying demographic, economic, and social processes that drive their ongoing transformation.

PPD 250m Third World Cities (4, FaSp) Gateway to the B.S., Planning and Development. The transition from traditional to modern cities in the developing world. Primacy and dualism; comparative urbanism as an expression of cultural variation; contrast in Western cities. (Duplicates credit in former PLDV 250.)

PPD 301 PPD Practices: Internship Seminar (2, FaSpSm) Policy, planning, and development skills for practice; internship seminar; leadership, group dynamics and presentation skills; application of management; organizational diversity; reflection on experiences. (Duplicates credit in the former PPD 401.)

PPD 303 Statistics for Policy, Planning, and Development (4, FaSpSm) Statistical applications applied to the real world; techniques including probability, sampling; hypothesis formation and testing; correlation, and linear regression. (Duplicates credit in the former PPD 404.)

PPD 306 Visual Methods in Policy, Management, Planning and Development (4, FaSp) Introduction to graphic design, photodocumentation, and geographic information systems as employed in planning, policy, and development. Visual explanations. Computer and by-hand applications. (Duplicates credit in former PLDV 410.)

PPD 313 Finance of the Public Sector (4, FaSp) Justifications for and effects of government policies; tax and spending sides of government budgets; public goods; externalities; social insurance; redistribution and welfare; tax policy. (Duplicates credit in former PPMT 313.) *Prerequisite:* ECON 203.

PPD 314 Public Policy and Law (4, Fa) Institutional foundations and analysis of public policy issues; policy formulation and implementation; application of theories; case analyses.

PPD 315 Analytic Foundations for Public Policy (4, Sp) Qualitative methods of analysis; ethical and political implications of policy choices; issue diagnosis and policy design skills; critical reasoning and ethics; policy leadership.

PPD 316 Human Resource Management for Public Organizations (4, FaSp) Human resource development and management; values and processes in civil service career systems; training practices; human relations in supervision; personnel theory. (Duplicates credit in former PPMT 316.)

PPD 318 Financial Accounting in Public and Nonprofit Organizations (4, FaSp) Basic accounting principles and concepts necessary for the preparation and understanding of financial statements; accounting for service organizations in the public/nonprofit sector; fund accounting. (Duplicates credit in former PPMT 351.)

PPD 320 Organizational Behavior in Public Administration (4, FaSp) Understanding human behavior in public organization: motivation, roles, communication; group behavior and decision-making in public context; managing conflict; leadership and change in public complex organizational systems. (Duplicates credit in former PPMT 485.)

PPD 325 Fundamentals of Health Policy and Management (4, FaSp) Institutions, policies, and processes affecting health care policy and management; historical and philosophical roots; management of health care delivery; access and quality issues; responsiveness to public needs. (Duplicates credit in the former PPD 230.)

PPD 330 Introduction to Health Care Systems (4, Sp) Concepts and determinants of health and illness; health care delivery organizations and programs; the role of the administrator; issues in health care financing and access; quality evaluation; future trends. (Duplicates credit in former PPMT 330.)

PPD 340 The American System of Justice (4, Irregular) Introduction to the system of justice administration: components — police services, judiciary, corrections; interrelationships and issues; management strategies for change. (Duplicates credit in former PPMT 340.)

PPD 342 Crime and Public Policy (4, Fa) Public policy agenda-setting, alternatives formulation, and implementation for crime and criminal justice; analysis of specific issues including crime control, death penalty and gun control. (Duplicates credit in former PPMT 342.)

PPD 343 Terrorism, Homeland Security, and Public Policy (4, Fa) Overview of terrorism, government policies and practices, issues of civil liberties, challenges to public sector management.

PPD 353 Introduction to Philanthropy and Grant-writing (4, Fa) History, theories, philosophies, and practices of philanthropy; relationship between philanthropy and nonprofit world; grant-making procedures and relation to social innovation.

PPD 357 Government and Business (4, FaSp) Inter-related roles of business and public institutions; effects of public policies and laws on business sector; incorporates public and business perspectives. (Duplicates credit in former PPMT 357.) *Prerequisite:* ECON 203.

PPD 358 Urban and Regional Economics (4, Fa) Basic concepts of urban and regional economies; how planners intervene in the urban market; housing, transportation, public goods; land use politics; fiscal issues; cost-benefit analysis. (Duplicates credit in former PLDV 402.)

PPD 360 Urban Transportation Planning and Policy (4, Sp) Current transportation planning and policy critiques. Transportation planning; the relationship to urban structure; conventional and para-transit modes; analysis of local plans. (Duplicates credit in former PLDV 480.)

PPD 362 Real Estate Fundamentals for Planning and Development (4, Fa) Urban markets, government role and influences; capital markets and financing environment; mortgage instruments and analytic tools for decision-making. (Duplicates credit in former PLDV 406.)

PPD 371 The Nonprofit Sector and the Public Interest (4, Fa) Theories of the voluntary nonprofit sector in society and its relationship to government and business; public policies toward the sector. (Duplicates credit in former PPMT 371.)

PPD 372m Public Service in an Urban Setting (4, Sp) Voluntary service in an urban, multicultural context: diverse meanings and practices, history, motivations, relationship to charity and change, dilemmas, public policies; service learning project required. (Duplicates credit in former PPMT 372.)

PPD 373 Public Policy and Planning Analysis (4, FaSp) Applied analytic modeling and data manipulation; visual presentation; interpretation of data; needs assessment and market failure analysis; indexing; extrapolation and simple forecasting; simple risk analysis; benefit-cost analysis. (Duplicates credit in the former PPD 473.) *Prerequisite:* ECON 203, PPD 225, PPD 303.

PPD 380ab International Perspectives on Urban Problem Solving (4-4, Irregular) Research on comparative urban public policy and administration utilizing case study approach; field research includes study in various foreign cities. (Duplicates credit in former PPMT 412ab.)

PPD 382 International Development (4, FaSp) Definitions and measurements of development; impact of globalization; concept and practice of international and development administration and planning at local, national, and global governance levels. (Duplicates credit in former PLDV 405.)

PPD 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only. (Duplicates credit in former PLDV 390 and PPMT 390.)

PPD 402 Management of Public and Nonprofit Organizations (4, Fa) Contemporary management theory; the nature of complex organizations; organizational and intergovernmental arrangements; roles and responsibilities of managers; managerial and organizational effectiveness; organizational structure and dynamics.

PPD 403 Management Analysis I (4, Sp) Introduction to organizational and systems analysis; historical perspective; systems theory; information systems, procedure analysis; management planning; introduction to models. (Duplicates credit in former PPMT 403.)

PPD 407 Financial Management of Public and Nonprofit Organizations (4, Sp) Time value of money, risk, government bonds and tax-exempt financing, cost of capital, budgeting, financial statement analysis, and working capital management.

PPD 410 Comparative Urban Development (4, Sp) Urbanization and urban development and growth through an international scope; globalizing cities.

PPD 411abcd Sacramento Semester (4-4-4-4, Irregular) Exploration of political, economic, and administrative climate of the state government; basic processes and functions considered through seminars, research projects, visitations, group discussions, and internships. (Duplicates credit in former PPMT 411abcd.)

PPD 412L GeoDesign Practicum(4, FaSp) (Enroll in SSCI 412L)

PPD 413 Administration of Health Care Organizations (4, Sp) Theory and practice; role of governing bodies, medical staffs and quality review committees; current trends; community responsibility; regulatory and oversight agencies. (Duplicates credit in former PPMT 439.)

PPD 414 Community Health Policy and Planning (4, Sp) Historical perspectives on and the contemporary practice of community health planning; impact of culture, socioeconomics, and environment; policy dimensions; urban planning's role in enhancing and sustaining health.

PPD 415 Health Policy (4, Sp) Health policy analysis and challenges; price of health; structure of major sectors in health care; role of insurance in policy debates; trade-offs with policy decisions. *Prerequisite:* PPD 325.

PPD 417 History of Planning and Development (4, Sp) Historical evolution of planning and development. How changing modes of planning and development have shaped the built landscape throughout the century. (Duplicates credit in former PLDV 485.)

PPD 420 Environmental Impact Assessment (4, Sp) Exploration of the role of the National Environmental Policy Act and the California Environmental Policy Act; study of environmental impact assessments including the regulatory aspects, stakeholder and participatory processes, and legal framework.

PPD 425 Designing Livable Communities (4, Fa) Theories and concepts of livable communities and good city form; case studies of historical and current best practices; field visits; collaborative design project. (Duplicates credit in former PLDV 407.)

PPD 427L Geographic Information Systems and Planning Applications (4, Fa) Basic GIS concepts, ArcView and other GIS software, planning applications and databases, basic cartography; students select, research and prepare a planning GIS analysis project.

PPD 429 Urban Design Practicum (4, Irregular) Application of design concepts and graphic skills to a local design problem sponsored by a local public or private client in a studio setting; site visits, community contact, presentations. (Duplicates credit in former PLDV 414.) *Prerequisite:* PPD 306, PPD 425.

PPD 431 Undergraduate Policy, Planning, and Development Studio (4, FaSp) Application of methods in the exploration of a specific project, policy, or organization from the multiple perspectives of the five tracks in the undergraduate program. Open only to seniors.

PPD 435 Analyzing Real Estate Markets for Planning and Development (4) Macro- and micro-analysis of urban property markets (residential, commercial, and industrial) with regard to their location and dynamics. (Duplicates credit in former PLDV 446.) *Recommended preparation:* PPD 362.

PPD 437 Advanced Finance and Investment for Planning and Development (4, FaSpSm) Advanced real estate principles. The nature, operation, and role of U.S. mortgage markets. Mortgage financing of residential and income-producing property types. (Duplicates credit in former PLDV 456.) *Prerequisite:* PPD 362, MATH 117.

PPD 438 Local Economic Development (4, Fa) Economic development in a capitalist system, historic review, sectoral review, funding, strategizing, partnerships, evaluation; class project. (Duplicates credit in former PLDV 447.)

PPD 439 Housing and Community Development (4, Fa) Evolution of government housing and community development programs; present practices, e.g., housing elements, economic development, neighborhood rehabilitation; housing needs and market analysis; housing and health. (Duplicates credit in former PLDV 440.)

PPD 440 Management of Justice Systems (4, Irregular) Social controls and delivery of justice administration services; comparative systems; organization theory and justice administration; system adaptation and change; system performance measurement: economy, efficiency, effectiveness. (Duplicates credit in former PPMT 440.)

PPD 441 Judicial Administration (4, Irregular) Local, state, federal judicial systems; constitutional, legislative, judicial influences on administrative action. Administrative problems associated with judicial functions including district attorney, public defender, the courts. (Duplicates credit in former PPMT 441.)

PPD 442 Administration of Police Services (4, Irregular) Police and society; the structure and organization of American policing, current managerial problems; police research and development; future planning; administration of police juvenile programs. (Duplicates credit in former PPMT 442.)

PPD 452 Organization and Interface of Juvenile Justice Subsystems (2, FaSp) Effective interface among juvenile justice subsystems (police and social service agencies, schools, courts); legal/jurisdictional parameters, resource constraints; strategies for joint intervention and problem resolution. (Duplicates credit in former PPMT 452.)

PPD 453 Program, Policy, and Legislative Trends in Juvenile Justice (2, Irregular) Examination of current research findings and legislation in juvenile justice; relations of new information to operating assumptions of agencies; impacts, trends; implications for management practice. (Duplicates credit in former PPMT 453.)

PPD 454 Problems and Issues in the Delivery of Youth Services (2, Irregular) Strategies for coordinated mobilization of diverse juvenile justice agencies; resolution of conflicting agency objectives (e.g., enforcement vs. rehabilitation). Information and resource needs; organizational skills, techniques. (Duplicates credit in former PPMT 454.)

PPD 461 Sustainable Communities, Policy and Planning (4, FaSp) Policy and planning as shaped by sustainability theories; sustainability indicators; topics include water resources, air quality, land use regulations, environmental design, carrying capacity, ecological footprint analysis.

PPD 466 Urban Government and Management (4, Irregular) Preparation and discussion of cases dealing with selected policy areas including transportation, housing, poverty, and environmental quality. (Duplicates credit in former PPMT 427.)

PPD 468 Cross-Cultural Negotiations: Communication and Strategy (4) (Enroll in COMM 468)

PPD 475 The Future of California (4) (Enroll in MDA 475)

PPD 476 Politics and Administration (4, Sp) Administrative relationships to the policy processes; influence of political and economic pressures on administrative policy determination; political behavior by administrators; case analysis. (Duplicates credit in former PPMT 486.)

PPD 478 Social Innovations (4, Fa) Strategies and processes of social innovation and change; examination of social change in the market, government, and within the nonprofit sector; dynamics; civic action and activism.

PPD 482 Comparative Public Administration (4, Sp) Methodology, theories, and models of comparison; functional processes of administration in developing and developed nations compared; role of bureaucracy in development and nation-building; ecology of administration. (Duplicates credit in former PPMT 482.)

PPD 485m U.S. Immigration Policy (4, Fa) Examination of the historical and contemporary components of U.S. immigration policy with emphasis on policies addressing legal permanent immigrants, refugees, asylees, the undocumented.

PPD 490x Directed Research (1-8, max 12, FaSpSm) Individual research and readings. Not available for graduate credit. (Duplicates credit in former PLDV 490x and PPMT 490x.)

PPD 497ab Senior Thesis (a: 2, Fa; b: 2, Sp) Writing of the honors capstone project in an area of interest related to the track of study; research and writing skills. Open only to seniors.

PPD 498 Senior Honors Seminar (4, FaSpSm) Concepts, theories, and methods of analysis of a selected topic within the fields of public policy, management and planning. Students must have a 3.5 GPA in PPD courses; 3.0 GPA overall.

PPD 499 Special Topics (2-4, max 8, FaSpSm) Selected topics in Policy, Management and Planning. (Duplicates credit in former PLDV 499 and PPMT 499.)

PPD 500 Intersectoral Leadership (2) Roles of public, private, nonprofit, and civil society sectors in policy, planning, and development. Leadership skills in negotiation, conflict resolution, institutional design, problem solving.

PPD 501ab Economics for Policy, Planning and Development (2-2) *a:* Microeconomic theory as applied to policy, planning, and development; concepts of efficiency; macroeconomic issues. *b:* Microeconomic analysis and modeling to incorporate Market failure and issues of uncertainty and information failure; organization models; policy instruments; policy and planning applications.

PPD 502x Statistical Foundations for Public Management and Policy (2, FaSp) Statistical analysis concepts and reasoning; sampling and data sources; focus on basic statistical applications in public management and policy analysis. Not for graduate credit for MHA, MPA, MPP and affiliated degrees.

PPD 507 Six-Sigma Methods and Applications (3, FaSpSm) (Enroll in ISE 507)

PPD 508 Health Care Operations Improvement (3, Sp) (Enroll in ISE 508)

PPD 509 Problems and Issues in the Health Field (4, FaSp) Principles of epidemiology; disease trends, treatment efficacy, influences on utilization; health promotion, disease prevention and health protection; intergovernmental relationships; management of public health programs. (Duplicates credit in former PUAD 530.)

PPD 510ab Financial Management of Health Services (4-2, FaSp) *a:* Accounting principles, financial reports, managerial finance, financial planning, capital investments, working capital analysis; elements of budgeting and reimbursement; performance standards; reporting; developing a management system. Open only to graduate students. *Prerequisite:* PPD 516; *recommended preparation:* PPD 502x or competence in statistics. *b:* Changing practices, emerging issues, strategies and innovations in financial planning, management, and regulation; federal and state policies and requirements.

PPD 511 Health Information Systems (2, FaSm) Conceptual framework for data base development; relational data management; use of health statistics; health indicators; confidentiality, security, privacy. *Recommended preparation:* PPD 502x or competence in statistics and PPD 516 or competence in accounting.

PPD 512 Health Administration Residency Seminar (2, max 4, Sp) Supervised study of health care administration, governance, professional staff relations, internal operations and controls, legal and regulatory requirements, management policy and strategy. (Duplicates credit in former PUAD 533.) *Prerequisite:* PPD 509, PPD 510a, PPD 545; minimum of 20 graduate level units.

PPD 513 Legal Issues in Health Care Delivery (2, FaSp) Rights of consumers; health-related powers of governments; rights and responsibilities of health care providers; interrelationships of rights, powers, and responsibilities. Open only to graduate students. *Recommended preparation:* PPD 509 or substantial prior work experience in health care organizations.

PPD 514 Economic Concepts Applied to Health (4, FaSpSm) Relationships between economic characteristics and health status; impact of economy on health services industry; demand and resources for health services; utilization, prices, costs, health insurance. (Duplicates credit in former PUAD 537.) *Prerequisite:* PPD 501a.

PPD 515 Strategic Management of Health Organizations (4, FaSpSm) Application of principles of health administration in several practice settings. Decision-making; strategic management; organizational performance; communication; provider comparisons. *Prerequisite:* PPD 510a or HMG 565, PPD 545 or HMG 520; *recommended preparation:* PPD 509, PPD 511, PPD 513, PPD 514, PPD 557.

PPD 516 Financial Accounting for Health Care Organizations (4) Accounting as a management tool; accounting systems; basic accounting concepts and procedures; budgets; financial statements. Open only to graduate students.

PPD 517 Concepts and Practices in Managing Health Care Organizations (2, FaSm) Application of principles of health administration. Role of managers; managing people and programs; human resource management concepts and applications; working with professionals; governance; public relations.

PPD 518 Quality of Care Concepts (2, Sp) Quality issues and complexities affecting health care; fundamentals of quality improvement programs; examination of quality issues and improvement programs in various health care venues; strategies.

PPD 519 Methods and Applications of Health Services Research (2, Fa) Examination of policy and management issues for empirical research; indicators and measurement of outcomes; impact on policy and management decisions; methodology; analysis of quantitative and qualitative data. *Prerequisite:* PPD 514.

PPD 520 Economic Approaches to Health Policy Analysis (2, Sp) Evaluation of current major health policy challenges and issues; economic analysis of behavioral responses to change in health care policy; new legislation; policy trade-offs. *Prerequisite:* PPD 514.

PPD 521ab Information Technology Management Systems in Health Care (2-2, Sm) Principles and methods of systems analysis; assessment; strategic planning, design consideration; e-health and e-commerce system trends; health care information systems application areas; regulatory requirements. *Prerequisite:* PPD 511. *b:* Analytic methods used to develop data-driven solutions; specific problems in health care organizations; integrating data; communicating data; interpretation; exploration of new approaches for improvement.

PPD 524 Planning Theory (2, Fa) Development of a critical perspective by becoming more aware of the intellectual roots of the planning profession, with a focus on practical outcomes of actions. (Duplicates credit in former PLUS 501.)

PPD 525 Statistics and Arguing from Data (2, FaSp) Fundamentals of probability and statistics, planning analysis techniques, computing standards, and understanding of the rhetoric related to statistical analysis. (Duplicates credit in former PLUS 502.)

PPD 526 Comparative International Development (2, Fa) Introduction to comparative international development with a focus on regional growth and urban development. (Duplicates credit in former PLUS 505.)

PPD 527 The Social Context of Planning (2, Sp) Examination of the formation of the modern urban environment with its consumer culture, social classes, and racial and ethnic diversity. (Duplicates credit in former PLUS 506.)

PPD 529 Legal Environment of Planning (2, Sp) Understanding of the legal system and its processes and laws applicable to land use and development and the legal nature of powers of public and private entities. (Duplicates credit in former PLUS 509.)

PPD 530 Historical Analysis of Urban Form and Planning Practice (2, Sp) Awareness, analysis, understanding, and influencing the city building process locally and regionally; isolate and exercise tools and methods of visual literacy. (Duplicates credit in former PLUS 510.)

PPD 531L Planning Studio (4, 8, 12, max 12, FaSp) Application of methods in planning, programming, research, and evaluation in a professional context; data collection and analysis; case studies; practical applications. (Duplicates credit in former PLUS 576L and PLUS 676L.)

PPD 532L International Planning and Development Laboratory Workshop (4-8, Sm) Application of planning principles and methods to specific urban planning problems abroad; involves preparation in the spring semester and an overseas field visit and a collaborative practicum. (Duplicates credit in former PLUS 575L.)

PPD 533 Planning History and Urban Form (2) History of urban planning with an emphasis on the evolution of how planning shaped the physical environment in response to political, economic, and social issues.

PPD 540 Public Administration and Society (4, FaSpSm) Administrative concepts, institutions, legal systems, and practices; values; facilitation of responsibilities and rights; professional applications for personal, private sector, and public achievement. (Duplicates credit in former PUAD 500.)

PPD 541 Public Financial Management and Budgeting (4, Fa) Financial management applied to public and nonprofit organizations; financial valuation, financial markets, budgeting, tax administration, debt financing, cost-benefit analysis and financial analysis. (Duplicates credit in PPDE 645.)

PPD 542 Policy and Program Evaluation (4, Sp) Methods and models for policy and program evaluation; methods of collecting and analyzing evaluation data; processes for linking evaluation to policy formulation and program management. (Duplicates credit in former PUAD 525 and former PUAD 529.) *Prerequisite:* PPD 502x.

PPD 543 Internship Seminar (1, FaSp) Supervised study of management, analytical, or other professional activities in government; integration of theory, practice and relevant literature. (Duplicates credit in former PUAD 544.)

PPD 545 Human Behavior in Public Organizations (4, FaSpSm) Behavior in organizations; focus on personal, interpersonal, and group level factors that influence such behavior. (Duplicates credit in former PUAD 585.)

PPD 546 Capstone in Public Administration (4, FaSpSm) Constitutionally accountable and ethical practice, individually and organizationally; applications of core competencies; practical inquiry, analysis, systems; comparative frameworks; citizenship and public service. (Duplicates credit in form PUAD 597.) Open only to master's and doctoral students. *Prerequisite:* PPD 501b, PPD 540, PPD 545.

PPD 552 Managing and Financing Public Engineering Works (3, FaSpSm) (Enroll in CE 552)

PPD 554 Foundations of Public Policy Analysis (2, Fa) Introduction to public policy analysis; issue diagnosis and policy design; analytic reasoning and argumentation; the role of the public policy professional; ethical issues in policy analysis. Open only to MPP students and Certificate in Public Policy students.

PPD 555 Public Policy Formulation and Implementation (4, Sp) Political and organizational perspectives on policy making process; agenda setting, policy design, adoption, implementation, evaluation, modification or termination. Policy leadership skills: negotiation and strategic mapping. (Duplicates credit in former PUAD 528 and PPD 554 and PPD 559.)

PPD 557 Modeling and Operations Research (4, FaSpSm) Management science methods that support decision making in policy, management, and planning settings. Includes linear programming, queuing theory, decision analysis, and forecasting. Open only to master's or doctoral students. *Prerequisite:* PPD 502x or PPD 525.

PPD 558 Multivariate Statistical Analysis (4, FaSp) Applied multivariate statistics in support of policy, management, and planning problem solving. Includes regression analysis, logit models, and an introduction to time-series models and multi-equation estimation. Open only to master's and doctoral students. *Prerequisite:* PPD 502x or PPD 525.

PPD 559 Policy Implementation and Evaluation (4, FaSp) Theoretical approaches, critical issues, and research methods in public policy implementation. Field-based research project. (Duplicates credit in former PUAD 570.)

PPD 560 Methods for Policy Analysis (4, Sp) Examination of methods used in the analysis of policy methods, including cost benefit analysis, decision and risk analysis, and applied social science methods. (Duplicates credit in former PUAD 572.) *Prerequisite:* PPD 502x and PPD 554 and PPD 501b.

PPD 561ab Policy Analysis Practicum (1, 3, FaSp) Application and integration of the knowledge and techniques of analytic, quantitative, managerial, political and ethical analyses to specific public policy problems. (Duplicates credit in former PUAD 589.)

PPD 568 Environmental Governance and Sustainability (2, Fa) Introduction to leading issues of environmental governance and policy in looking toward a more sustainable future; normatively important concerns and the social, cultural, and political dimensions; thematic look from values to action.

PPD 569 Applied International Policy Analysis and Management Project (4, Sp) Enables students to integrate theory, research and practice into an applied project of their own choosing. The output of this course is a professional report in a selected public policy or management area. (Duplicates credit in former PUAD 507.)

PPD 570 Applied Statistics for Planning, Policy and Management (4, Sm) Use of statistical reasoning to answer questions related to public policy and management. Students will review and understand selected statistical techniques for analyzing data and for addressing public policy and management questions of interest using applied data analysis. (Duplicates credit in former PUAD 523.)

PPD 571 International Public Policy and Management Seminar (4, Fa) An introduction to the concepts and methods of public policy analysis and management. Highlights some of the constraints of the policy process. Includes examples from the United States but also presents comparative views of the contours of public policy in both developed and developing nations. The course applies public policy and management frameworks to selected areas of social policy. (Duplicates credit in former PUAD 524.)

PPD 572 Special Issues in International Public Policy (1-4, max 12, FaSpSm) Current international public policy on issues such as governmental reform, regulation, social welfare, poverty alleviation and international aid. Policy framework and in-depth analysis of specific topics of relevance to governmental agencies and international organizations.

PPD 587 Risk Analysis (4) Concepts of risk analysis, risk in engineered systems, environmental risk, security risks; fault trees, event trees, risk simulations; risks and decision-making. *Recommended preparation:* MATH 108 or MATH 116.

PPD 588 Introduction to Transportation Planning Law (3) (Enroll in CE 579)

PPD 589 Port Engineering: Planning and Operations (3) (Enroll in CE 589)

PPD 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

PPD 594abz Master's Thesis (2-2-0, FaSp) Credit on acceptance of thesis. Graded IP/CR/NC.

PPD 599 Special Topics (2-4, max 8, FaSpSm) Selected topics in public policy, management and planning.

PPD 600 Management of Managed Care Organizations (2, FaSpSm) Managed care arrangements, interorganizational relations, management practices and controls, medical staff relations, strategic planning, marketing, utilization review, quality assurance, outcomes measures. *Prerequisite:* PPD 545 or HMG 520; *recommended preparation:* PPD 516, PPD 510a or HMG 565.

PPD 601 Management of Long-Term Care Organizations (4, Fa) History, development, trends; major policy issues; organization of systems; principles and techniques of administration; management of institutional and community based programs. Open only to graduate students.

PPD 602 Strategic and Operational Planning for Health Services (4, 2 years, Fa) Strategic, institutional, and program planning theory and methods; governmental and legal requirements, certificate of need processes, reimbursement controls; financing and marketing considerations, practices, and methods. (Duplicates credit in former PUAD 535.)

PPD 603 Marketing of Health Services (4, Sm) Assessing community needs and organizational service capabilities; evaluating competition; qualitative and quantitative market research methods; market communications and advertising; developing marketing plans. *Recommended preparation:* PPD 502x or competence in statistics.

PPD 604 Seminar in Hospital Administration (4, Sm) Hospital systems and functions; managerial processes, theory, and practice; governance structures; legal, regulatory, administrative, and professional requirements; medical and professional staff; multi-institutional arrangements; controls. Open only to graduate students. *Prerequisite:* PPD 545 or HMG 520; *recommended preparation:* PPD 516.

PPD 605 Frontline Issues in Health Services Administration and Policy (2, max 6, FaSpSm) Emphasis on current or emergent issues in the health care industry. Focus on impact of recent health legislation and/or health care system responsiveness.

PPD 606 Urban Health Policy (4, Fa) Addresses current U.S. health policy issues and the critical processes that shape them, with an emphasis on urban populations; institutional, economic, social, ethical, and political factors.

PPD 607 Introduction to Public Health Policy (4, Sp) Public health policy and analysis methods; evaluation of the public health system and safety net programs.

PPD 608 Leadership Symposium in Health Management and Policy (1, max 3, FaSpSm) A forum for leading executives and policymakers to address ways they or their organizations improve healthcare financing, delivery and management, in the U.S. and internationally.

PPD 609 Physician Practice Management (2, Sp) Overview of medical practice management issues, structures, systems and strategies for effective clinical and financial performance of physician organizations. *Recommended preparation:* PPD 509.

PPD 610 Managed Care Contracting (2, Fa) Provides practical and strategic decision-making skills in managed care contracting, including contract types, terms and conditions; financial assessment; proposal development and analysis; and negotiation. *Prerequisite:* PPD 600; *recommended preparation:* PPD 510a or HMG 565, PPD 514.

PPD 611 Policy Issues in Planning and Development (4, Fa) Overview of policy issues in planning and development professions in the U.S. and abroad. Special attention to collective decision making, role of institutions, and ethics. (Duplicates credit in former PLUS 503.)

PPD 612 Research and Analytical Techniques (4, Sp) Professional practice-oriented analytic skill; fundamentals of data manipulation; spreadsheet applications and forecasting; and communication of results. (Duplicates credit in former PLUS 504.)

PPD 613ab Policy, Planning, and Development International Laboratory (a: 1, max 2, Sp; b: 3, max 6, Sm) Research methods for intensive practical field research and evaluation; policy, management and planning practice in intercultural contexts; preparation for professional-level consulting abroad.

PPD 614 Management in Planning Practice (2 or 4, 2 years, Sp) Administrative, management, political, and other problems faced by the practicing professional planner. (Duplicates credit in former PLUS 521.)

PPD 615 Comparative Urbanization, Development, and Inequality (4, Irregular) Theories of inequality, dependency and dualism in relation to urbanization, growth, and poverty in developing countries; development and underdevelopment; core-periphery linkages. (Duplicates credit in former PLUS 534.)

PPD 616 Participatory Methods in Planning and Policy (4) Approaches to community participation, introducing students to the theories behind participatory methods as well as to the skills to implement them.

PPD 617 Urban Demography and Growth (4, Fa) Theory and policy regarding population change in urban areas; housing; cohort analysis; immigration; ethnicity; employment; education. Methods of graphic representation; census data manipulation, interpretation, forecasting. (Duplicates credit in former PLUS 539.)

PPD 618 Housing Facilities and Community Development (4, Irregular) Structure of the building industry and technology. Housing markets and programs; environmental standards. Community development and redevelopment. Planning, program development, finance, and coordination of public facilities and services. (Duplicates credit in former PLUS 540.)

PPD 619 Smart Growth and Urban Sprawl: Policy Debates and Planning Solutions (4, Irregular) Determinants and analytical models of land use; interaction of land uses with environmental quality and natural resources, land use policy instruments; regulation, taxation, public services. (Duplicates credit in former PLUS 562.)

PPD 620 General Plans (4, Fa) Assessment of a recently adopted general plan, analysis of the general plan process, and detailed review of each major element and issue. (Duplicates credit in former PLUS 563.)

PPD 621 Environmental Impacts (4, Sp) Legal, political/institutional, and technical aspects of environmental impact reports for urban planning. (Duplicates credit in former PLUS 561.)

PPD 622 Seminar in Urban Development (4, Irregular) Central city housing and renewal problems and policies. Site selection, organization; land valuation, acquisition, disposition; relocation and management; reuse; site planning and development; politics; financing. (Duplicates credit in former PLUS 541.)

PPD 623 Community Development and Site Planning (4, Sp) Urban form and emerging community design practices; design project development; evaluation and assessment of site planning in cities and local communities.

PPD 624 Local Economic Development: Theory and Finance (4, Sp) Socioeconomic change, economic development theory, assessment techniques, and economic indicators in the context of planning and development policies and programs. (Duplicates credit in former PLUS 547.)

PPD 625 Planning and Economic Development Finance (4, Fa) Fundamentals for economic development professionals and policy makers including feasibility analysis and the financing of facilities, social services, and community-based enterprises. (Duplicates credit in former PLUS 546.)

PPD 626 Public/Private and Mixed Enterprises Planning (2, Sp; 4, Fa) Case studies of planning and public/private and mixed enterprises; public production of private goods; privatization of public services; public/private partnerships; mixed enterprises.

PPD 627 Design Skills for Urban Planners (4, Fa) Develop observation, description, analysis, and conceptualization skills related to urban spatial conditions; advance professional communication proficiencies. (Duplicates credit in former PLUS 573.)

PPD 628 Urban Planning and Social Policy (4, Irregular) Urban planning and social work; theory, values, techniques of inquiry, and problem-solving methods appropriate to urban planning and social work. (Duplicates credit in former PLUS 552.)

PPD 629 Planning in the Voluntary Nonprofit Sector (4, Irregular) Structure of voluntary nonprofit sector; role in social, economic, and spatial planning; corporate philanthropy; foundations; pass-through organizations; nonprofit planning requirements. (Duplicates credit in former PLUS 545.)

PPD 630 Urban Economic Analysis (4, Sp) Economic models of cities and city development and structure; housing and land markets; transportation systems; problems of congestion and pollution; evaluation of urban policies. (Duplicates credit in former PLUS 566.)

PPD 631 Geographic Information Systems for Policy, Planning, and Development (2) Introduction to GIS systems and usage in the public sector; spatial data; understanding software and the application of technology; analysis of data using GIS.

PPD 632 Planning Analysis and Evaluation (4, Sp) Methods of policy, program, and plan evaluation: economic principles and theoretical concepts introduced, followed by case studies. (Duplicates credit in former PLUS 574.)

PPD 633 Urban Transportation Planning and Management (4, 2 years, Fa) Background applications of established urban travel forecasting procedures; land use; trip-generation, trip-distribution, modal-choice, trip-assignment; evaluation; criticisms. (Duplicates credit in former PLUS 580.)

PPD 634 Institutional and Policy Issues in Transportation (4, Sp) Analysis of policies relating to transportation alternatives; institutional environment and background; federal, state, regional, and local agency responsibilities and interactions. (Duplicates credit in former PLUS 581.)

PPD 635 Principles of Transportation Systems Analysis (4, Fa) Planning, design, modeling, and operation of inter- and intra-urban transportation networks. Analysis of contemporary engineering-economic issues relevant to transport, especially questions pertaining to infrastructure. (Duplicates credit in former PLUS 582.)

PPD 636 Infrastructure and Modern Society (2, Sp) Survey of infrastructure issues that relates principles from multiple disciplines to the provision of vital services and encourages critical thinking within a systems context.

PPD 637 Forecasting and Urban Planning: A Survey of Theory and Methods (4, Sp) Overview of forecasting methods and applications in urban planning processes used to determine urban futures; includes theoretical and institutional factors as well as quantitative methods.

PPD 638 Integrative Seminar (4, FaSpSm) Individual research and preparation of an integrated comprehensive study coordinated with a sponsor such as a government agency or development firm. (Duplicates credit in former PLUS 591.) *Prerequisite:* PPD 611, PPD 612.

PPD 639 Introduction to Community and Economic Development (4, FaSp) Theories of community and economic development and a contextual understanding of the forces that change the development and community life of urban areas.

PPD 640 Leadership Foundations: Competencies and Core Values (4, Sm) An intensive introduction to leading through core values. Focuses on developing leadership skills at the personal level to build a foundation for leadership at all levels. Open only to Executive Master of Leadership students.

PPD 641 Leading Individuals, Groups and Teams (4, Fa) Leadership styles in various settings; team demographics, and dynamics; problem-solving; decision-making; diversity and critical thinking skills; effect of culture on small group communication; managing conflict. Open only to Executive Master of Leadership students. *Prerequisite:* PPD 640.

PPD 642 Strategic Leadership of Organizations (4, Sp) Strategic analysis; strategic planning; leadership; performance measurement and management; control systems; organizational structure and networks; organizational culture; organizational learning and change. Open only to Executive Master of Leadership students. *Prerequisite:* PPD 641.

PPD 643 Leading Transformations Across Sectors: Integrative Seminar (4, Sm) Application and practice of leadership skills working across the public, private and nonprofit sectors. Skills include negotiation, collaboration, communication, political management and ethical responsibilities. Open only to Executive Master of Leadership students. *Prerequisite:* PPD 642.

PPD 644 Shaping the Built Environment (4) Introduction to the theories and concepts and good city form. Explores the options for designing more livable and sustainable urban communities.

PPD 645 Professional Development (1-4, max 8, Irregular) Selected topics in the practical application of administrative concepts. Graded CR/NC. (Duplicates credit in former PUAD 502.)

PPD 646 Fieldwork (1-4, max 8, Sp) Supervised study of management activities in governmental agencies. Graded CR/NC. (Duplicates credit in former PUAD 503.)

PPD 647 Finance of the Public Sector (4, Sp) Sources of government revenue, intergovernmental financial relations, budgeting, public goods theory. Theoretical and applied skills in analysis of equity and efficiency issues. (Duplicates credit in former PUAD 513.) *Prerequisite:* PPD 501b.

PPD 648 Concepts and Practices of Public Budgeting (4, Irregular) Budget planning, budget formulation, tools for budget analysis and budget implementation. (Duplicates credit in former PUAD 515.)

PPD 649 Concepts and Practices in Public Personnel Administration (4, FaSm) Concepts of man and of work; workforce; government personnel systems, including merit concepts, classification, and compensation; collective bargaining; organizational justice; training and development. (Duplicates credit in former PUAD 516.)

PPD 650 Organization Development in Public Administration (4, FaSp) Overview of concepts and methodologies of organization development; diagnosing organizational needs; developing change strategies; selecting appropriate interventions. (Duplicates credit in former PUAD 517.)

PPD 651 Seminar in the Administration of Local Government (4, Irregular) Intensive consideration of the functions of the municipal executive and his environment. Research preparation and discussion of cases. (Duplicates credit in former PUAD 520.)

PPD 652 Financial Administration in Local Government (4, Irregular) Revenue sources, fees and charges, benefit assessments; financing economic development and redevelopment, issuing and managing debt, current asset management, and state-local relations. (Duplicates credit in former PUAD 521.)

PPD 653 Training in the Public Sector (4, Fa) Emergence of public service training; learning theories; program development process — assessing needs, design, delivery, and evaluation; role of media; individual, group, organization development; managing training. (Duplicates credit in former PUAD 522.)

PPD 654 Information Technology Management in the Public Sector (4, FaSpSm) Application of computer and information technology in government; e-government; information technology architecture; systems project management. (Duplicates credit in former PPD 518.)

PPD 655 Administrative Law (4, Sm) Administrative perspectives on legal principles of agency rule-making and adjudication; distinctions between the two; informal administrative actions; decision-making; judicial review; public control of administrative decisions. (Duplicates credit in former PUAD 543.)

PPD 656 Political Management: Theory and Applied Techniques (4, Sm) Political management theories; strategy formation; research and data collection approaches; computer applications; electronic databases; issue management; problem-solving techniques; ethical considerations. (Duplicates credit in former PUAD 545.)

PPD 657 Political Leadership in Public Organizations (4, Sp) Concepts and skills for public executives and senior managers; understanding the dynamics of governmental institutions and policy processes; organizational and personal assessment skills. (Duplicates credit in former PUAD 546.)

PPD 658 Advocacy in Public Administration (4, Fa) Perspectives on advocacy in the policy process; practice of advocacy; accessing the policy process; simulation of the advocacy process; ethical considerations. (Duplicates credit in former PUAD 547.)

PPD 659 National Security Administration and the Domestic and International Environment (4, Irregular) Interplay of domestic and international environments; resultant constraints upon national security program administration; administrative and organizational implications for future scenarios. (Duplicates credit in former PUAD 549.)

PPD 660 Local Agency Debt and Cash Administration (4, Irregular) Overview of methods of debt and cash administration including official statement analysis; mechanics of different types of issues; and cash management principles. (Duplicates credit in former PUAD 550.)

PPD 661 Intergovernmental Management: Local Perspective (4, Fa) Role of city, special district, and metropolitan governments in intergovernmental relations; intergovernmental impacts on local policy process and service delivery; management problems and alternatives. (Duplicates credit in former PUAD 552.)

PPD 662 Intergovernmental Management: State Perspective (4, FaSp) Role of state government in intergovernmental relations, emphasis on California experience; financial aspects of intergovernmental system. (Duplicates credit in former PUAD 553.)

PPD 663 Intergovernmental Management: Federal Perspective (4, Irregular) Role of national government in intergovernmental process; impact of federal legislative, executive, and judicial actions on state and local government; intergovernmental policy-making process. (Duplicates credit in former PUAD 554.)

PPD 664 Contract Management (2, Sp) Contract management techniques in the public and private sectors; micro and macro management; compliance and negotiation; conflicts of interest and ethical issues.

PPD 665 Contemporary Issues in Philanthropy (4) Motivations and strategies of philanthropists; philanthropic foundations and emerging institutions for philanthropy; issues of philanthropic stewardship, public policy and public accountability.

PPD 666 Administrative Research and Analysis (4, Irregular) Theory and methods for study of administrative effectiveness: problem solving, performance measurement, administrative and organizational research, quality improvement, and change implementation. (Duplicates credit in former PUAD 506.) *Prerequisite:* PPD 502x.

PPD 667 Public Ethics (4, Sp) Following an introduction to the study of ethics, relationships among administrative, political and policy ethics are examined, emphasizing the ethics of the administrative role. (Duplicates credit in former PUAD 560.)

PPD 668 Entrepreneurship in the Public Sector (4, Irregular) Providing public services through the private and nonprofit sectors; public-private partnerships; political and organizational skills required for public entrepreneurship. (Duplicates credit in former PUAD 561.)

PPD 669 Federal Management Systems (4, FaSp) Principal institutions and processes in federal government for overhead leadership and control; examines Office of Management and Budget, Office of Personnel Management, Merit Systems Protection Board, General Services Administration, and General Accounting Office. (Duplicates credit in former PUAD 564.)

PPD 670 Management of Intergovernmental Programs (4, Sp) Analysis of relationships among governmental units in delivery of governmental programs; historical development of intergovernmental relations; present status and future implications. (Duplicates credit in former PUAD 566.)

PPD 671 Decision-Making in Regulatory Agencies (4, Irregular) Risk assessment, management, and communication concepts and practices; comparisons of regulatory decision making in regulatory agencies; emerging benefit assessment, cost-effectiveness, and communication issues. (Duplicates credit in former PUAD 567.)

PPD 672 Presidency, Congress, and the Bureaucracy (4, SpSm) Relationships in national government among political executive, legislative, and administrative units; reviews institutions, formal processes, and political dynamics. (Duplicates credit in former PUAD 568.)

PPD 673 Strategic Planning in the Public Sector (4, Sp) Analysis/field application of action research models for strategic planning in public agencies; design of effective public systems; citizens/administrators' roles in strategic decision-making. (Duplicates credit in former PUAD 574.)

PPD 674 Science, Technology, and Government (4, Irregular) Impact of science/technology on governmental policy, processes, institutions; critical policy areas in science/technology; machinery for formulating science policy; governmental impact on science/technology. (Duplicates credit in former PUAD 575.)

PPD 675 Nonprofit Management and Leadership (4, FaSpSm) Issues in nonprofit management and leadership including: the role of boards; strategic planning; marketing and fund-raising; financial management; and volunteer and human resource management. *Recommended preparation:* PPD 689.

PPD 676 Comparative Public Administration (4, Irregular) Methodologies, theories and models of comparison; administrative systems; role and functions of the public sector; administrative cultures. (Duplicates credit in former PUAD 579.)

PPD 677 International Development Administration (4, Sp) Development of theories; role of international institutions in resource exchanges; foreign investment and trade policies; national planning and allocation systems; development and modernization strategies and implementation. (Duplicates credit in former PUAD 581.)

PPD 678 Processes of Change in Developing Societies (4, Irregular) Nature of traditional and transitional societies; theories and practice of developmental change; role of bureaucracy in development; institution building; public enterprise; technology assessment and transfer. (Duplicates credit in former PUAD 582.)

PPD 679 Financial Administration in Developing Countries (4, Sm) Public sector finance; tax policy and administration; budgeting and auditing; debt management; public enterprise and development banks; planning; techniques; project assessment. (Duplicates credit in former PUAD 583.)

PPD 680 Development of Effective Groups and Organizations (4, Fa) Theories and techniques of assessing and improving interpersonal relationships and group dynamics in an organizational context; action research-based approaches to implementing organizational change. (Duplicates credit in former PUAD 586.)

PPD 681 Public Organization and Management Theory (4, FaSp) Nature and management of public organizations; examination of organizational characteristics, forms, and processes, including the relationship with the broader environment. (Duplicates credit in former PUAD 595.)

PPD 682 Justice Administration: A Management Perspective (4, 2 years, Fa) Justice administration as an interactive system: law, etiology of crime, police, the judiciary and corrections. Interface of offenders with community and political force fields. (Duplicates credit in former PUAD 540.)

PPD 683 Homeland Security and Public Policy (4, FaSp) Definition and history of terrorism, counterterrorism, domestic policy and public sector management; intelligence/information sharing and analysis; emergency preparedness planning, response and recovery.

PPD 684 Leadership Development in the Public and Nonprofit Sectors (2, Fa) An overview of leadership concepts, frameworks and skills; application of leadership in complex or inter-sectoral settings.

PPD 685 Human Resources Management in Public and Non-Profit Sectors (2, Fa) Merit principles, position classification, recruitment and selection, compensation, organizational development, labor relations; challenges and strategies for managing a diverse workforce.

PPD 686 U.S. Immigration Policy (4, Sp) Overall understanding of contemporary U.S. immigration policy.

PPD 687 Strategic Management in the Nonprofit Sector (4, Sp) Strategic management of nonprofit organizations, social entrepreneurship, and management practice. *Prerequisite:* PPD 675 and PPD 689.

PPD 688 Business and Public Policy (4, Irregular) The business-government relationship; effects of selected public policies (antitrust, economic, and social regulation, industrial policies, legal policy) on firm and industry behavior. (Duplicates credit in former PUAD 557.) *Prerequisite:* PPD 501b.

PPD 689 The Nonprofit Sector and Philanthropy (4, FaSp) Nonprofit organizations and their relation to government and business; the role of philanthropy, social enterprise and public support; and implications for policy, strategy and management.

PPD 690 Alternative Dispute Resolution (4, Fa) Theory and methods of conflict analysis, negotiation, facilitation and mediation in the public sector. (Duplicates credit in former PUAD 519.)

PPD 691 Methods for Assessment and Protection of Environmental Quality (3, Sp) (Enroll in CE 564)

PPD 692 Transportation and the Environment (4, Sp) Analysis of the benefits and costs of urban transportation; concepts of social costs; benefits and externalities; environmental costs; social justice issues; policy and planning alternatives for sustainable transportation. (Duplicates credit in former PPD 584.) *Prerequisite:* PPD 501a.

PPD 693 Communicating Public Policy (4) Exploring the complex relationships that exist among policies, policymakers, and the media; analyzing the role of journalists and policy analysts in the public policy process.

PPD 694 Coastal Policy and Planning (4, Sp) Coastal management issues in the context of public and private users competing for land resources, the costs and benefits of seaports, compare coastal development models.

PPD 695 Clinical Issues for Managers (1, Fa) Introduces key information and concepts for managers of clinical services. Examines problems and issues facing health care managers and clinician relations.

PPD 696 Health Care Venture Development (2, SpSm) Focuses on developing the resourcefulness, know-how and decision support skills needed to identify, assess and develop new health ventures. Includes business planning, financing, strategy, entrepreneurship. *Recommended preparation:* PPD 510a or HMG 565.

PPD 697 Cultural Proficiency in Health Management and Policy (2, Sp) Provides an understanding of what social factors contribute to racial/ethnic, socioeconomic, and gender disparities in health and the culturally proficient provision of health care.

PPD 698 Strategic Management and Change (4) Theory and applied skills in management of social sector organizations with applications in international settings. Strategic management and planning; communication strategies, marketing and promotion; leadership skills; organizational development and change.

PPD 700ab Teaching Seminar (1-1, FaSpSm) Pedagogy: learning objectives, curriculum design, teaching methods, evaluation. Open only to doctoral students. Graded CR/NC.

PPD 706 Paradigms of Research and the Design of Inquiry (4, FaSp) Philosophy of social science; applied social research; research design; sampling and validity; overview of qualitative and quantitative methods. Open only to doctoral students.

PPD 707 Survey Research Methods (4, Sp) Collection and use of survey data: basic orientation, mechanics of using SAS, and interpretation of survey tabulations. Graduate standing. (Duplicates credit in former PLUS 608.) *Prerequisite:* PPD 525.

PPD 708 Qualitative Methods (4, Sp) Reflective and critical approach that questions data collection techniques, positions relative to those being studied, and explanatory methods. (Duplicates credit in former PLUS 609.) *Recommended preparation:* PPD 525 or PPD 612.

PPD 709 Applications in the Advanced Quantitative Methods (4, Sp) Statistical and econometric modeling in real estate finance, urban economics, public policy, and planning research. Building, estimating and adjusting models for real-world. *Prerequisite:* PPD 525.

PPD 710ab Research Seminar (a: 2, Fa; b: 2, Sp) Research fields and design; literature reviews; critical reading and critiquing; project development. Open only to doctoral students. Graded CR/NC. *Prerequisite:* PPD 706.

PPD 711 Theoretical Foundation of Public Management (4, Fa) Theories of the role, structure, and growth of the public sector; political economy of public bureaucracies; the voluntary nonprofit sector. *Prerequisite:* PPD 501b.

PPD 712 Seminar in Public Policy (4, Fa) Critical analysis of the policy field; theoretical foundations; integration of quantitative, organizational, and political considerations; policy research. (Duplicates credit in former PUAD 626.) *Prerequisite:* PPD 501b, PPD 554.

PPD 713 Advanced Planning Theory (4, Fa) Positive and normative attitudes of public plans, policies, programs, organizational and institutional settings; policy analysis; modeling of social choices; evaluation; applied welfare analysis; performance assessment. (Duplicates credit in former PLUS 605.)

PPD 714 Advanced Urban Development (4, Fa) Urbanization, urban economics, land use, the politics of growth, governance, regulation, and the state, immigration, and place promotion.

PPD 715 Political Economy and Institutional Analysis (4) Institutional dimension of political economy; analytic approaches in institutional analysis and their relevance for understanding the interactions between political and economic factors in public-sector issues. *Prerequisite:* PPD 501ab.

PPD 790 Research (1-12, FaSpSm) Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC. (Duplicates credit in former PLUS 790 and PUAD 790.)

PPD 794abcdz Doctoral Dissertation (2-2-2-2-0, FaSpSm) Credit on acceptance of dissertation. Graded IP/CR/NC. (Duplicates credit in former PLUS 794abcdz and PUAD 794abcdz.)

PPD 795 Law of the Political Process (2-4, max 8) (Enroll in LAW 795)

PPD 797 Public Policy in Law: Analysis and Advocacy (1-4) (Enroll in LAW 797)

POLICY, PLANNING, AND DEVELOPMENT — EXPANDED (PPDE)

PPDE 630 Community Health Planning (4, Sp) The role of planning in sustaining community health; examines relationship between health and environment; historical development, conceptualization and practice of community health planning.

PPDE 631 Public Space: Theory, Policy, and Design (4) Examination of contemporary issues and practices in the design, production, and uses of public space in a comparative perspective; implications for future design and public policy.

PPDE 632 Sustainable Cities (4, FaSp) Exploration of environmental problems linked to urbanization, drawing on historical analysis, social theory, scientific research, and city planning/design practice. Alternative policy options for urban sustainability. (Duplicates credit in the former GEOG 601.)

PPDE 633 Communicating City Design: Positions and Representations (2) Communicating the processes, products, and concepts of city design; merging theoretical and skill-based exercises for effective communication; verbal and graphic communication; physical components of urban landscape and dimensional attributes.

PPDE 634 Methodology, Methods and Tools for Urban Sustainability (2-4, FaSp) Methodology, assessment and planning methods for urban sustainability and land use planning; how the choice and use of theory and methods impact the planning process; systems and spatial analysis.

PPDE 644 Land Use and Transportation Planning (4) Key theories of land use — transportation interactions; understanding of land markets and derived-demand approach; use of evidence for information; travel data collection methods; application of land use.

PPDE 645 Financial Management of Nonprofit Organizations (4) Accounting and financial management principles and practices in nonprofit organizations: budgeting financial analysis, internal controls, financial policies, grant making and financial reporting. (Duplicates credit in PPD 541.)

PPDE 646 Grant Writing Practicum (2) Grant making process and proposal development; philanthropic foundations; strategies for funding; budgeting, logic models, and evaluation; peer review.

PPDE 647 Civic Engagement in Governance (4, Sp) Roles of citizens, civic associations, nonprofit organizations, government and business in democratic governance; civil society as the interface among these entities; techniques, purposes and contexts of civic engagement.

PPDE 648 Performance Management (2) Concept and practice of performance management; examination of performance measurement; analysis and reporting practices for organizational accountability and improvements; performance design, indicators, utilization of information.

PPDE 660 Environmental Policy Design and Analysis (2, Sp) Analytical foundation for design of institutions and policies; environmental policy; welfare economics and market failure; policy evaluation; economic policy instruments; climate change policy issues; other policy issues. *Prerequisite:* PPD 501a; *recommended preparation:* PPD 501b.

PUBLIC ADMINISTRATION (PUAD)

Frequency of course offerings varies from campus to campus. Check with individual campuses regarding availability.

PUAD 613 Seminar in Financial Policy (4, Irregular) Historical development and trends in public revenues and expenditures. Political, economic, and administrative significance of decisions in the field of financial management. *Prerequisite:* PPD 647.

PUAD 617 Seminar on Behavioral Aspects of Training and Development (4, Irregular) Theoretical concepts governing the administration of socio-technical systems, organization development, action training and research, and other development and change processes utilized in public service.

PUAD 675 Institutional Context of the Public Sector (4, Sp) Theories of the role, structure and growth of the public sector; public choice processes; political economy of public bureaucracies; the voluntary nonprofit sector. *Prerequisite:* PPD 501b.

PUAD 685 Seminar on Organizational Behavior in Public Systems (4, FaSp) Organizing processes; decision-making; communication; leadership; behavioral models; political and social behavior in organizations. *Prerequisite:* PPD 545.

PUAD 692 Multivariate Statistical Analysis (4, Fa) Multivariate analysis of qualitative and quantitative variables including multiple linear regression, multiple contingency table analysis, log-linear and logit models, and path analysis. *Prerequisite:* PPD 502x.

PUAD 695 Seminar in Administrative Theory (4, FaSp) Assessment of current normative and descriptive theories of public administration; variety of conceptual systems; operationalism; levels of organizational analysis. *Prerequisite:* PPD 540.

PUAD 697 Seminar in Public Management (4, Irregular) Public management research and theory; differences between private and public organizations; contextual influences on public management; contemporary empirical studies; bibliographic research. *Prerequisite:* admission to the DPA program.

PUAD 791ab Public Administration Research Seminar (1, 1, FaSp) Presentation and discussion of research histories and current research projects of members of the faculty and distinguished guest scholars. Open only to Ph.D. and DPA students. Graded CR/NC.

REAL ESTATE DEVELOPMENT (RED)

RED 500 Real Estate Development and the Economy (2, Sm) Linkages between national and regional economies and the performance of the real estate sector. Anticipating development trends. Public policy applications.

RED 509 Market Analysis for Real Estate (4, Fa) Explores macro and micro aspects of residential, retail, office, and industrial markets and examines methodologies for analyzing such markets for real estate development/investment purposes. *Prerequisite:* RED 542.

RED 510 Real Estate Practice and Principles (4, FaSp) Fundamental principles of real estate analysis; economics; capital markets; development decision-making; relationships between real estate markets and federal, state and local government policies; property value.

RED 511 Foundations of Real Estate Analysis (4, FaSp) Principles of real estate analysis; capital markets; importance of uncertainty and metrics of risk; investments; valuation techniques; use of debt and equity, leases, taxes. *Prerequisite:* RED 510.

RED 512 Real Estate Project Analysis (4, FaSp) Fundamental economic theories; analytical techniques; practical applications for market analysis of various forms of real estate. *Prerequisite:* RED 511.

RED 541 Finance Fundamentals for Real Estate Development (2, Sm) Introduction to the general principles of finance with application to real estate development, including capital markets, financial institutions, valuation and risk management.

RED 542 Finance of Real Estate Development (3, FaSm) Theory and methods of real estate finance and investment. Real estate investment analysis, real estate entities, taxation; introduction to securitization of real estate equities, debt. *Prerequisite:* RED 541.

RED 544 Real Estate Capital Markets (2, Fa) Explore structure, instruments and institutions of real estate capital markets. Consider linkages between real estate and capital markets. Assess role of Real Estate Investment Trusts. *Prerequisite:* RED 542.

RED 545 Advanced Real Estate and Financial Modeling (2, Sp) Quantitative problem solving using computerized modeling. Complex debt financing, including lender participation, subordination, joint venture structuring, systematic treatment of real estate portfolios. *Prerequisite:* RED 542.

RED 546 Applications of Real Estate Finance to Problems of Development (3, Sp) Advanced topics in finance applied to cases and problems of real estate development; emphasis on structuring, finance and evaluation of various types of development projects. *Prerequisite:* RED 542.

RED 547 Project Management and Construction (2, Sm) Managing the building phase of development. Architectural and engineering aspects of construction management for the real estate developer.

RED 551 The Approval Process (4, FaSpSm) Approval process for real estate development including land use entitlement, site selection, zoning, environmental review, community and government relations, infrastructure financing, ethical issues, negotiation skills.

RED 562 Legal Issues in Real Estate Development (4, FaSp) Ownership and transfer of real estate; formation and enforcement of contracts; business associations; environmental regulation; taxation of property transfers; acquiring, financing, leasing of commercial property. (Duplicates credit in former RED 662.)

RED 563 Introduction to the Asset Management of Real Estate (2, Fa) Overview of institutional asset management: creating and implementing investment and portfolio strategies through the development, acquisition, underwriting, and operational stages of the investment, asset disposition.

RED 564 Issues in Asset Management of Real Estate (2, Sp) Advanced issues in institutional asset management. How value is created during investment process with focus on tactical, operational, and strategic goals of asset and owner. *Prerequisite:* RED 563.

RED 571 Introduction to Appraisal Principles, Procedures, and Standards (4, Fa) Valuation concepts. Theory and problem solving. Cost, sales comparison, and income approaches.

RED 572 Advanced Appraisal Approaches and Applications (2, Sp) Highest and best use. Advanced income capitalization. Advanced cost and sales comparison approaches. Advanced applications. *Recommended preparation:* RED 571.

RED 573 Design History and Criticism (2, Sm) The concepts, language and metaphors of design-related disciplines are examined in relation to design and construction values and choices in real estate development. (Duplicates credit in former RED 673.)

RED 574 Building Typologies (2, Fa) The exploration of categories of building types, including retail, industrial, residential, office and institutional, using key examples or case studies from each. (Duplicates credit in former RED 674.)

RED 575L Community Design and Site Planning (2-4, max 8, Sp) Physical implementation of development projects. Students will develop concept plan, preliminary design and marketing plan for selected domestic and/or international development sites. (Duplicates credit in former RED 675L.)

RED 583 International Development Opportunities (2, Sp) A survey of various markets prominent in the global real estate community. Protocols for analyzing international development opportunities and cultural, political, and socioeconomic considerations.

RED 585 Comparative International Development Workshop (2-4, Sm) Comparative study tour focused on understanding international real estate development practices and markets, site visits and meeting with principals.

RED 590 Directed Research (1-12, FaSpSm) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department.

RED 598 Real Estate Product Development (2-4, max 12, FaSpSm) An evaluation of various real estate development types. Case studies and site visits.

RED 599 Special Topics (2-4, max 8) Current issues, trends, and developments in real estate development.

Military Courses of Instruction

AEROSPACE STUDIES (AEST)

AEST 100ab Aerospace Studies I: Air Force Mission and Organization (1-1, FaSp) *a:* Introduction to U.S. Air Force and the military profession; USAF organization and functions; Strategic Air Command organization, command, control, and weapons systems; communication skills. *b:* Organization and function of NORAD; tactical air, military airlift, systems, logistics, air training and communications commands; Army, Navy, Marines; reserves; separate operating agencies.

AEST 110ab Leadership Laboratory I (1-1, FaSp) Introduction to the military experience focusing on customs and courtesies, drill and ceremonies, and the environment of an Air Force officer. Graded CR/NC.

AEST 200ab Aerospace Studies II: Air Force History (1-1, FaSp) *a:* Development of aerospace power in the U.S. through World War II; emphasis on the Army Air Corps; communication skills. *b:* Development of aerospace power since World War II; emphasis on international confrontations involving the United States; communication skills.

AEST 210ab Leadership Laboratory II (1-1, FaSp) Introduction to the military experience focusing on customs and courtesies, drill and ceremonies, and the environment of an Air Force officer. Graded CR/NC.

AEST 220ab Advanced Leadership Laboratory II (a: 1, Fa; b: 1, Sp) Additional exposure to the military experience for continuing AFROTC cadets, focusing on customs and courtesies, drill and ceremonies, and the environment of an Air Force officer. Graded CR/NC.

AEST 300ab Aerospace Studies III: Air Force Management and Leadership (3-3, FaSp) Air Force management focusing on the new manager in the Air Force milieu. Emphasis on communication skills peculiar to the Air Force.

AEST 310ab Leadership Laboratory III (1-1, FaSp) Practical introduction to Air Force leadership focusing on military communicative skills, group dynamics, and application of theories of leadership and management. Graded CR/NC.

AEST 400ab Aerospace Studies IV: National Security Forces in Contemporary American Society (3-3, FaSp) Military professionalism and the context in which defense policy is formulated and implemented; national security policy, political/social constraints, and military justice.

AEST 410ab Leadership Laboratory IV (1-1, FaSp) Advanced Air Force leadership experience focusing on the practical development of the Air Force officer through command and staff positions within the Cadet Corps. Graded CR/NC.

AEST 420ab Leadership Laboratory V (1-1, FaSp) Advanced leadership experiences for AFROTC continuing cadets. Graded CR/NC.

MILITARY SCIENCE (MS)

MS 101 Foundations of Officership (1, Fa) Introduces students to issues and competencies that are central to a commissioned officer's responsibilities. Establish framework for understanding officership, leadership, and Army values followed and "life skills" such as physical fitness and time management. (Duplicates credit in former MS 100.)

MS 102 Basic Leadership (1, Sp) Establishes foundation of basic leadership fundamentals such as problem solving, communications, briefings and effective writing, goal setting, techniques for improving listening and speaking skills and an introduction to counseling. (Duplicates credit in former MS 110.)

MS 201 Individual Leadership Studies (2, Sp) Students identify successful leadership characteristics through observation of others and self through experimental learning exercises. Students record observed traits (good and bad) in a dimensional leadership journal and discuss observations in small group settings. (Duplicates credit in former MS 200.)

MS 202 Leadership and Teamwork (2, Sp) Study examines how to build successful teams, various methods for influencing action, effective communication in setting and achieving goals, the importance of timing the decision, creativity in the problem solving process, and obtaining team buy-in through immediate feedback. (Duplicates credit in former MS 210.)

MS 301 Leadership and Problem Solving (3, Fa) Students conduct self-assessment of leadership style, develop personal fitness regimen, and learn to plan and conduct individual/small unit tactical training while testing reasoning and problem-solving techniques. Students receive direct feedback on leadership abilities. (Duplicates credit in former MS 300.)

MS 302 Leadership and Ethics (3, Sp) Examines the role communications, values, and ethics play in effective leadership. Topics include ethical decision-making, consideration of others, spirituality in the military, and survey Army leadership doctrine. Emphasis on improving oral and written communication abilities. (Duplicates credit in former MS 310.)

MS 401 Leadership and Management I (3, Fa) Develops student proficiency in planning and executing complex operations, functioning as a member of a staff, and mentoring subordinates. Students explore training management, methods of effective staff collaboration, and developmental counseling techniques. (Duplicates credit in former MS 400.)

MS 402 Leadership and Management II (3, Sp) Study includes case study analysis of military law and practical exercises on establishing an ethical command climate. Students must complete a semester long Senior Leadership Project that requires them to plan, organize, collaborate, analyze, and demonstrate their leadership skills. (Duplicates credit in former MS 410.)

MS 499 Special Topics (2-4, max 8, FaSpSm) Selected topics in military science.

NAUTICAL SCIENCE (NAUT)

NAUT 001abx Deepwater Cruising (2-2, FaSp) An experiential approach to the sailing ship and seafaring, introducing offshore sailing theory and techniques, navigation, and basic oceanography as relevant to seamanship. Lecture and lab. Not available for degree credit. *a:* Crew level. *b:* Watch captain.

NAUT 002abx Advanced Deepwater Cruising (2-2)

Responsibilities and operations commanding an offshore sailing vessel including sailing theory and advanced techniques, advanced navigation, ships engineering, and oceanography relevant to seamanship. Not available for degree credit. *a:* Senior skipper. *b:* Advanced senior skipper. (Duplicates credit in former NAUT 302ab.) *Prerequisite:* NAUT 001bx.

NAVAL SCIENCE (NSC)

NSC 135 Introduction to Naval Science (2, Fa) Introduction to the structure, principles, and practices, lines of command and control, and functions of the various components of the naval service. Lecture, 2 hours; laboratory, 2 hours.

NSC 137 Seapower and Maritime Affairs (4, Sp)

Analysis of U.S. Navy development and campaigns; evolution of strategic, tactical, and maritime doctrines; interaction of naval affairs with national security and domestic policies. Lecture, 3 hours; laboratory, 2 hours.

NSC 251 Seamanship and Ship Operations (3, Fa)

Vector solutions of relative motion, tactical problems; tactical communications, instructions; fleet communications, organizations; rules of the Nautical Road; aviation and maritime meteorology; operation plans and orders. Lecture, 3 hours; laboratory, 1 hour.

NSC 283 Naval Ships Systems I (Engineering) (3, Sp)

Types, structure, and purpose of Naval ships, compartmentation, propulsion systems, auxiliary power systems, interior communications, ship control; ship design and stability. Lecture, 3 hours; laboratory, 2 hours.

NSC 335 Navigation (3, Fa)

Purposes, methods, and instruments of navigation; terrestrial and celestial navigation and nautical astronomy; time diagrams; lines of position by observation of celestial bodies. Lecture, 3 hours; laboratory, 2 hours.

NSC 337 Naval Ships Systems II (Weapons) (3, Sp)

Systems approach to naval weapons; linear analysis of ballistics; weapons control systems configurations and dynamics. Field trips. Lecture, 3 hours; laboratory, 2 hours.

NSC 343 Evolution of Warfare (3, Fa)

Causes and practice of warfare from ancient times; impact of changes in strategy, tactics, and technology; modern revolutionary warfare, global conflict, and politico-military relationships. Lecture, 3 hours; laboratory, 2 hours.

NSC 392 Amphibious Warfare (3, Fa)

Concepts of seaborne military operations; relationship of factors involved; characteristic operations of World War II; amphibious operation planning. Lecture, 3 hours; laboratory, 2 hours.

NSC 453 Leadership and Management I (2, Fa)

Principles of human relationships; principles of decision-making and management at the junior officer level; theory and techniques of leadership. Lecture, 2 hours; laboratory, 2 hours.

NSC 454 Leadership and Management II (2, Sp)

Introduction to primary duties of junior naval officers; counseling and interviewing techniques; review of basic administrative responsibilities at the division officer level. Lecture, 2 hours; laboratory, 2 hours.

USC School of Social Work



The USC School of Social Work, noted for its innovative learning methods, offers the MSW@USC program, which allows students nationwide to earn their Master of Social Work through Web-based study. Like all MSW students, online students complete fieldwork in their communities to earn their degrees. Here Danny Hernandez fulfills his field placement at James Jordan Charter Middle School in Northridge, CA.

The USC School of Social Work offers programs of study leading to the Master of Social Work (MSW) and Doctor of Philosophy (Ph.D.) in social work. These programs provide the student a broad background of knowledge about health and welfare problems, the meaning of programs past and present that have been established to meet them, and current issues and policy trends in the field.

At the same time, the student is helped to become a professional person through development of a philosophy in harmony with that of the profession: to prevent and mitigate severe social problems that challenge the viability of culturally diverse and complex urban settings; to build on the strengths of individuals, families and communities; and to lead the scholarly search for innovative, efficacious and just solutions.

Montgomery Ross Fisher

Building 214

Main: (213) 740-2711

Admissions: (213) 740-2013

FAX: (213) 740-0789

Email: sswadm@usc.edu

usc.edu/socialwork

Administration

Marilyn L. Flynn, Ph.D., *Dean*

R. Paul Maiden, Ph.D., *Vice Dean, Academic and Student Affairs*

Judy Axonovitz, M.S., *Director, Skirball Academic Center*

Janine Braun, EMBA, M.Ed., *Assistant Dean, Admissions and Scholarship Programs*

Paul Carlo, Ph.D., *Director, USC Center on Child Welfare*

Monica Ellis, M.A., *Assistant Dean, Student Services*

Carmen Frierson, *Associate Dean, Administration*

John Gaspari, MSW, *Executive Director, USC Center for Work and Family Life*

Mary Beth Harris, Ph.D., *Director, San Diego Academic Center*

Anthony Hassan, Ed.D., *Director, Center for Innovation and Research on Veterans and Military Families*

Dan Hester, *Director, International Programs*

Steve Hong, B.S., *Director, Management Information Systems*

Jehoon Lee, Ph.D., *Director, Center for Asian-Pacific Leadership*

Carrie Lew, Ed.D., *Assistant Dean, Professional Development and Alumni Relations*

Cindy Monticue, M.A., *Director, Marketing Communications*

Mich  lle Mor Barak, Ph.D., *Director, Ph.D. Program*

Scarlett Powers Osterling, MSW, *Senior Associate Dean, External Relations*

Cherry Short, M.Sc., *Assistant Dean, Global and Community Initiatives*

Wendy Smith, Ph.D., *Associate Dean, Faculty Development*

Haluk Soydan, Ph.D., *Director, Hamovitch Center for Science in the Human Services*

Donna Toulmin, J.D., *Director, USC/DCFS Training Program, USC Center on Child Welfare*

William Vega, Ph.D., *Executive Director, USC Roybal Institute on Aging*

Joshua Watson, Ed.D., *Director, Student Services*

June Wiley, Ph.D., *Director, Virtual Academic Center*

Leslie Wind, Ph.D., *Director, Orange County Academic Center*

Terris Wolff, MBA, MSBA, *Director, Information Technology*

Marleen Wong, Ph.D., *Associate Dean, Field Education*

Faculty

The Golden Age Association/Frances Wu Chair in Chinese Elderly: Iris Chi, DSW

Dean's Professor of Social Work and Preventive Medicine: Hortensia Amaro, Ph.D.

Driscoll/Clevenger Professor of Social Policy and Administration: Bruce Jansson, Ph.D.*

Albert G. and Frances Lomas Feldman Professor of Social Policy and Health: Lawrence Palinkas, Ph.D.

Ernest P. Larson Professor of Health, Ethnicity and Poverty: Kathleen Ell, DSW

Frances G. Larson Professor of Social Work Research: John Brekke, Ph.D.*

John Milner Professor of Child Welfare: Jacquelyn McCroskey, DSW*

Provost's Professor of Social Work, Preventive Medicine, Psychiatry, Family Medicine and Gerontology: William Vega, Ph.D.

David Lawrence Stein/Violet Goldberg Sachs Professor: Penelope K. Trickett, Ph.D.*

Lenore Stein-Wood and William S. Wood Professor of Social Work and Business in a Global Society: Mich  lle E. Mor Barak, Ph.D.*

Richard M. and Ann L. Thor Endowed Professor of Urban Social Development: Ron Avi Astor, Ph.D.

Professors: Hortensia Amaro, Ph.D.; Ron Avi Astor, Ph.D.; John Brekke, Ph.D.*; Iris Chi, DSW; Kathleen Ell, DSW; Marilyn L. Flynn, Ph.D.; Bruce Jansson, Ph.D.*; R. Paul Maiden, Ph.D.; Jacquelyn McCroskey, DSW*; Mich  lle E. Mor Barak, Ph.D.*; Lawrence Palinkas, Ph.D.; Penelope K. Trickett, Ph.D.*; Avelardo Valdez, Ph.D.; William Vega, Ph.D.; Wynne Waugaman, Ph.D.; Suzanne Wenzel, Ph.D.

Associate Professors: Maria Aranda, Ph.D.*; Concepcion Barrio, Ph.D.; Devon Brooks, Ph.D.; Maryalice Jordan-Marsh, Ph.D.; Helen Land, Ph.D.*; Karen Lincoln, Ph.D.; Ferol Mennen, DSW*; Dorian Traube, Ph.D.; Ann Marie Yamada, Ph.D.

Assistant Professors: Julie Cederbaum, Ph.D.; Alice Cepeda, Ph.D.; Tamika Gilreath, Ph.D.; Jeremy Goldbach, Ph.D.; Erick Guerrero, Ph.D.; Benjamin Henwood, Ph.D.; Michael Hurlburt, Ph.D.; Seth Kurzban, Ph.D.; Emily Putnam-Hornstein, Ph.D.; Eric Rice, Ph.D.

Senior Clinical Fellow: Mary Gress, Ph.D.

Clinical Professors: Margarita Artavia, MSW; Judy Axonovitz, MSW; Ralph Fertig, J.D.; Stephen Hydon, MSW; Murali Nair, Ph.D.; Jolene Swain, MSW; Doni Whitsett, Ph.D.; Marleen Wong, Ph.D.; Gary J. Wood, Ph.D.

Clinical Associate Professors: Jane Allgood, Ph.D.; Rafael Angulo, MSW; Juan Araque, Ph.D.; Ruth Cisowski, MSW; Tory Cox, MSW; Jill Davis, MSW; Laurel Davis, MSW; Annalisa Enrile, Ph.D.; Pamela Franzwa, MSW; Kim Goodman, MSW; Heather Halperin, MSW; Mary Beth Harris, Ph.D.; Anthony Hassan, Ed.D.; Shelley Levin, Ph.D.; Martha Lyon-Levine, Ph.D.; Gokul Mandayam, Ph.D.; Shannon Mayeda, Ph.D.; Renee Michelsen, MSS; Sam Mistrano, J.D.; Tyan Parker Dominguez, Ph.D.; Elizabeth Phillips, Ph.D.; Elizabeth

Pringle-Hornsby, MSW; Michael Rank, Ph.D.; Mich  l Sela-Amit, Ph.D.; Candace Smith, Ed.D.; Wendy Smith, Ph.D.; Eugenia Weiss, Psy.D.; June Wiley, Ph.D.; Leslie Wind, Ph.D.; Deborah Winters, MSW; Darlene Woo, MSW; Beverly Younger, Ph.D.

Clinical Assistant Professors: Rosemary Alamo, MSW; Sherri Arnold, MSW; Suh Chen Hsiao, MSW; Laurel Davis, MSW; Conrad Fuentes, MSW; Michael Johnson, Ed.D.; Dawn Joosten, Ph.D.; Omar Lopez, MSW; Sara McSweyn, MSW; Erik Schott, Ed.D.; Ruth Supranovich, MSW; Vivien Villaverde, MSW

Adjunct Professors: Lucia Aparicio, MSW; Vern Bengtson, Ph.D.; Margaret Fetting, Ph.D.; Michael Jackson, Ph.D.; Wanda Jewell, MSW; Sheri Kelfer, MSW; Diane Meadow, Ph.D.; Rose Monteiro, MSW; Monika White, Ph.D.; Jeff Wilkins, M.D.; Marcia Wilson, Ph.D.

Adjunct Associate Professors: Rita Davis, MSW; Nancy Flax-Plaza, MSW; Herbert Hatanaka, DSW; CarolAnn Peterson, Ph.D.; Mara Ziegler, MSW

Adjunct Assistant Professors: Estela Andujo, MSW; Steven Bush, MSW; Stephanie Carter, MSW; Linda Cox, MSW; Leigh Miller, MSW; Carlos Sosa, MSW

Research Professors: Charles Kaplan, Ph.D.; John Landsverk, Ph.D.; Haluk Soydan, Ph.D.

Research Associate Professors: Jehoon Lee, Ph.D.; Donald Lloyd, Ph.D.; Janet Schneiderman, Ph.D.

Research Assistant Professors: Hazel Atuel, Ph.D.; Sonya Negri, Ph.D.; Jan Nissly, Ph.D.; Harmony Rhoades, Ph.D.

Emeritus Professors: Howard J. Parad, DSW*; Rino Patti, DSW*; Barbara Solomon, DSW*

Emeritus Field Education Faculty: Rhoda G. Sarnat, M.A.

*Recipient of university-wide or school teaching award.

Degree Programs

The School of Social Work offers the Master of Social Work (MSW), the Doctor of Philosophy (Ph.D.) and the dual Master of Social Work/Doctor of Philosophy, Social Work (MSW/Ph.D.) degrees. In addition, the school offers dual degrees with the schools of business; gerontology; law; medicine; public policy; and Hebrew Union College. Undergraduate students in the university may earn a minor in Children and Families in Urban America.

Master of Social Work

The program of study which leads to the Master of Social Work degree consists of 60 units (46 units of course work and 14 units of field practicum). The program is available at these locations: University Park, Orange County Academic Center in Irvine, Skirball Academic Center in West Los Angeles, San Diego Academic Center in Rancho Bernardo and Virtual Academic Center via the Internet and can be completed in a full-time (two-year)

program or part-time (three- or four-year) program. In addition, some classes are offered at City Center in downtown Los Angeles.

The basic foundation curriculum introduces students to the range of social welfare problems and programs, and to the varieties of human behavior with which social work is concerned. At the same time, students learn the methods by which the social worker, the social agency and the organized community work with people and problems. Field instruction, under supervision in a social agency, is scheduled for two or three days a week, enabling students to apply theory to practice. All content areas include content on diversity, social work values and ethics, and economic justice and populations at risk. At the completion of foundation requirements, students are expected to have acquired a sense of professional responsibility and the ability to use knowledge on behalf of the individual, the group and the community.

The concentration curriculum builds on the generic social work knowledge obtained in the foundation study by offering a choice of five advanced practice concentrations: families and children; health; mental health; community organization, planning and administration (COPA); and social work and business in a global society. Students can complete all foundation courses in Orange County, as well as course work for the concentrations offered, which is determined by student interest but is typically families and children; health; and mental health concentrations. If a student's concentration is not offered, classes must be taken at the University Park Campus. The San Diego Academic Center offers all foundation courses, as well as all course work for the mental health and COPA concentrations. Students in the Virtual Academic Center may select the COPA; families and children; health; mental health; and social work and business in a global society concentrations. The Skirball Academic Center offers selected courses in the concentrations. Students who attend first-year courses at the Skirball Academic Center will take some or all concentration courses at University Park.

There are also five sub-concentrations at University Park: social work practice (1) with older adults; (2) for systems of mental illness recovery; (3) in school settings, which meets the academic requirements for the Pupil Personnel Services Credential necessary for social work practice in the public schools of California; (4) in public child welfare; and (5) in military social work and veteran services. The San Diego Academic Center offers the social work practice in school settings and the military social work and veteran services sub-concentrations. Students in the Virtual Academic Center may select the military social work and veteran services sub-concentration. Students designate their choice of concentration in the final semester of the foundation year. The basic second-year curriculum (required courses and field instruction placement) will be determined by this choice of concentration; elective courses are available as part of the concentration-year curriculum. Students in all concentrations are required to enroll in SOWK 611 Leadership in the Social Work Profession and Organizations: Theory and Practice.

This system of curriculum offerings provides a strong educational program with a continuing commitment to a generalist base and a focused set of concentrations, in combination with a range of options to meet

special interests. This program enables graduates to move into the social work community with a combination of knowledge and skills in a broad arena, as well as in-depth knowledge and skills in a particular method, population or area of service.

The curriculum builds on a liberal arts foundation which all entering students are required to have. The applicant should have a range of undergraduate courses in the humanities and the social and physical sciences.

General Requirements

The Master of Social Work degree requires a minimum of 60 semester units of courses, including field education (1000 clock hours).

The degree is not awarded solely on the basis of credits earned but also requires evidence of competence in both theory and practice. At their discretion, the faculty may require courses or fieldwork or both beyond the minimum requirements.

Time Limit

The master's degree program requires two academic years of full-time study or a structured part-time program which must be completed in a maximum of four years.

Grade Point Average Requirement

In accordance with the requirements of the Graduate School, a grade point average of 3.0 (A = 4.0) is required for admission to the School of Social Work. Likewise, the university requires an overall GPA of 3.0 for graduation from the master's degree program.

Course Requirements

Course requirements are organized in five interdependent content areas that continue throughout the two years: social work practice; social welfare, policy and services; human behavior and the social environment; research; and fieldwork.

A typical foundation program includes two courses in social work practice; two courses in social welfare, policy and organizations; two courses in human behavior; two semesters of fieldwork; two semesters of fieldwork seminars; and one course in research methods.

Students typically choose their concentration in the final semester of the foundation year and must enroll in three courses required by the concentration they select. Additionally, students in all concentrations must take two semesters of field instruction, three elective courses and SOWK 611 Leadership in the Social Work Profession and Organizations: Theory and Practice. Each student completes an individualized study plan, which is approved by the concentration faculty.

Academic credit is not granted for life experience or work experience in lieu of the field practicum or any other courses in the curriculum.

REQUIRED COURSES		UNITS
SOWK 503	Human Behavior and the Social Environment I	3
SOWK 505	Human Behavior and the Social Environment II	3
SOWK 534	Policy and Practice in Social Service Organizations	3
SOWK 535	Social Welfare	3

SOWK 543	Social Work Practice with Individuals	3
SOWK 545	Social Work Practice with Families, Groups and Complex Cases	3
SOWK 562	Social Work Research	3
SOWK 586ab	Field Practicum	3-3
SOWK 587ab	Integrative Learning for Social Work Practice	2-2
SOWK 611	Leadership in the Social Work Profession and Organizations: Theory and Practice	3
SOWK 686ab	Field Practicum II	4-4

Plus 9 additional units of concentration courses and 9 additional units of Social Work electives

Field Education

Field education is an integral part of the Master of Social Work curriculum. Two year-long field education courses are required. In the foundation year, the field courses include: 16 hours per week in field placement and participation in a field seminar on campus. In the concentration year, students are typically in placement 20 hours per week. Field education takes place in selected agencies and centers, which represent the complete range of social services. Field placements are approved on the basis of the quality of their professional practice, commitment to social justice and to addressing social work problems, interest in participating in professional education, and ability to make personnel and resources available. Field instructors, who are employed by either the agency or the school, are responsible for teaching students in their field placements. The assistant dean for field education is administratively responsible for all field assignments.

Each placement in field education is made on an individual basis which takes into consideration the following: geographic location, previous experiences, future goals, professional interests, special needs and stipend requirements. In these placements, students engage in selected and organized social work activities that provide practical experience in applying skills learned in the classroom.

Foundation field placement is arranged by the school with the view of building a generalist foundation in direct services through providing practice experiences in a continuum of modalities including work with individuals, families, small groups and communities and with a diversity of client populations and treatment issues. All students are also required to complete an assignment related to the organization in which they are placed. The generalist experience also encompasses a range of theoretical concepts and models to develop breadth of learning and establish a broad base for practice. The foundation year field course is a prerequisite for entry into the concentration placement.

The school, the agency and the student collaboratively decide on the concentration field placement with the view of developing the special knowledge and depth of skill needed for professional practice in a designated area of concentration. This advanced experience is designed to build on the student's foundation year and to develop knowledge and skills within the concentration the student has selected.

Students must participate in an appropriate practice class concurrently with the field course and in a field seminar during the foundation field course. Satisfactory performance in both foundation and advanced field courses is required for all students earning the Master of Social Work degree, including those enrolled in dual degree programs.

The number of field placement options for non-driving students is limited. Students are encouraged to have access to an automobile for field placement.

A student must complete and receive credit for a minimum of 450 hours in the foundation year and 550 hours in the concentration year of field placement in order to be awarded the Master of Social Work degree.

Research Requirement

The research requirement consists of one foundation course. In the foundation year of study, SOWK 562 is designed to impart knowledge of research methodology and statistics. In the concentration year, students are required to enroll in core concentration courses that combine research skills acquired in the foundation year with evaluation and program development in their concentration field of study.

Transfer Students

Applicants who have recently completed part or all of the first half of graduate study at a Council on Social Work Education-accredited school of social work may apply as transfer students. In addition to materials described in the section on application procedures, transfer students should forward course syllabi and a bulletin of the school for the year in which the course or courses were taken.

Transfer credits may be applied for those courses determined to be equivalent to USC's first-year courses or to meet the expectation of the second-year electives. The grade point average for any course taken at another school of social work must be at least 3.0 on a 4.0 grading scale. Where foundation courses are similar, but not equivalent, transfer students may be permitted to take a waiver examination for possible exemption from those courses. Transferred credit for fieldwork will be computed on the basis of clock hours completed as well as on the breadth and depth of contents covered.

Military Social Work and Veteran Services

The School of Social Work offers a Military Social Work and Veteran Services sub-concentration in the MSW curriculum targeting military personnel, spouses and other military dependents and military retirees who wish to maintain a post-military career affiliation with the armed forces; military veterans who wish to provide professional services to their military comrades; and civilian personnel who are committed to assisting military personnel, their families and military veterans with adapting, coping and managing the stresses and strains of military life and post-military life.

Course Requirements

Beyond the basic professional social work foundation course requirement of the Master of Social Work degree, the sub-concentration in Military Social Work and Veteran Services will offer a series of highly specialized courses focusing on the needs of military personnel, veterans and their families. Students will take

three courses in special topics that focus on this sub-concentration. Individuals pursuing the Military Social Work and Veteran Services sub-concentration will also be able to select from a variety of highly relevant elective courses that will serve to enhance their training and future service delivery capabilities.

Field Instruction

Students must complete a 600-clock hour internship in a military hospital, base/installation family services unit, Veterans Affairs, Vet Center, etc.

Advanced Standing Option

The School of Social Work offers an advanced standing option for students who have graduated with a Bachelor of Social Work (BSW) degree from a Council on Social Work Education (CWSE)-accredited BSW program within the past five years. To be eligible for the advanced standing option, students must have successfully completed their BSW with a minimum GPA of 3.25 for the last 60/90 units of undergraduate work. A cumulative 3.5 GPA for all social work courses with a grade of B or better is required for admission.

Students admitted to advanced standing must successfully complete three 2-unit intensive courses (SOWK 600 Assessment in Social Work Practice, SOWK 606 Neuropsychological Development and SOWK 604 The Role of Evidence-Based Practice in Social Work) in one six-week session prior to their first academic semester. Students who successfully complete these courses will be given credit for foundation year requirements (31 units) and advance into the concentration year or second year of study to complete the additional 29 units required for graduation. Students who do not pass the bridge courses will not be given the 31 units of credit, but may opt for the 60-unit MSW program and enter the foundation year or first year of the program.

Advanced standing allows students to bypass the foundation year and enter the concentration year of studies. The concentration curriculum builds on the generic social work knowledge, which they obtained through their BSW experience, by offering a choice of five advanced practice concentrations: (1) community organization, planning and administration (COPA); (2) families and children; (3) health; (4) mental health; and (5) social work and business in a global society. Students in all concentrations are required to enroll in SOWK 611 Leadership in the Social Work Profession and Organizations: Theory and Practice. Advanced standing students may also complete one of the following five sub-concentrations at the University Park Campus: (1) social work practice with older adults; (2) systems of mental illness recovery; (3) school social work, which meets the academic requirements for the Pupil Personnel Services Credential necessary for social work practice in the public schools of California; (4) public child welfare; and (5) military social work and veteran services. Please note, some academic centers do not offer all concentration and/or sub-concentration areas of studies.

The advanced standing option consists of 35 units (27 units of course work and 8 units of field practicum). The option is available at these locations: University Park Campus, Orange County Academic Center in Irvine, San Diego Academic Center in Rancho Bernardo and Virtual Academic Center via the Internet and can be completed

in three semesters. In addition, some classes are offered at City Center in downtown Los Angeles.

Dual Degree Programs

The School of Social Work currently offers dual degree programs with a number of other USC professional schools. In addition, the school maintains a dual degree program at Hebrew Union College located adjacent to the USC campus.

The goal of these programs is to encourage graduate students to gain a recognized competence in another discipline which has direct relevance to the roles filled by social workers in society. Dual degree programs are based on the premise that some topics covered in the school are also addressed in the curricula of other departments, so that some credit toward an MSW degree may be given for specific courses in the cooperating department. Similarly, these departments have recognized that some credit toward their corresponding degree may be awarded for work completed in the School of Social Work. For this reason, students enrolled in dual degree programs can obtain both degrees with a reduced number of total units. Students wishing to enroll in dual degree programs must apply for and be admitted to both schools.

Master of Social Work/Doctor of Philosophy, Social Work (MSW/Ph.D.)

The MSW/Ph.D. dual degree program is a course of study leading to both a graduate degree (Master of Social Work) and doctor of philosophy (Ph.D.) in social work. This course of study is offered to exemplary students seeking advanced research based study in social work to become professional leaders who will make significant contributions to the knowledge base of the profession in the social work academic world.

Prospective students must meet both the MSW and Ph.D. standing admission requirements.

Requirements

A total of at least 90 units is required for the dual degree with at least 42 units in the MSW program and at least 48 units in the Ph.D. program (exclusive of SOWK 794 Doctoral Dissertation). Students who select the mental health concentration will be required to complete at least 93 units (at least 45 MSW units and at least 48 Ph.D. units). The program can be completed within four years.

REQUIRED MSW COURSES		UNITS
SOWK 505	Human Behavior and the Social Environment II, or a graduate-level course in developmental psychology in Department of Psychology or another department	3
SOWK 543	Social Work Practice with Individuals	3
SOWK 545	Social Work Practice with Families, Groups and Complex Cases	3
SOWK 562	Social Work Research	3
SOWK 586ab	Field Practicum	3-3
SOWK 587ab	Integrative Learning for Social Work Practice	2-2

SOWK 611	Leadership in the Social Work Profession and Organizations	3
SOWK 686ab	Field Practicum II	4-4

Students in the COPA, Families and Children, Health, and Social Work and Business in a Global Society concentrations will be required to complete an additional 9 units of MSW core concentration specific courses, while students in the Mental Health concentration will be required to complete an additional 12 units of MSW core concentration specific courses.

REQUIRED PH.D. COURSES		UNITS
SOWK 702	Theories of Human Behavior in the Contexts of Social Environments	3
SOWK 703	Explanatory Theories for Larger Social Systems, or	
SOWK 743	Theories for Practice with Small Systems	3
SOWK 733	Policy Analysis and Advocacy in a Comparative Social Policy Context	3
SOWK 744	Theories for Practice with Large Systems	3
SOWK 760L	Introduction to Social Work Statistics	3
SOWK 761L	Multiple Regression for Social Work Research	3
SOWK 762	Social Work Research Methods I	3
SOWK 763	Social Work Research Methods II: Issues in Research for Social Work Practice	3
SOWK 764	Advanced Multivariate Statistics	3

Dual degree students will develop an Individualized Study Plan (ISP) at two points in their educational process. They will develop a plan with their mentor before the fall semester begins in year 1 to identify courses they plan to take in years 1 and 2.

It will be approved by the doctoral committee. Students will develop a plan with their mentor in the spring semester of their second year to identify courses and tutorials they will take in their third and fourth years.

Program Adaptation

The USC School of Social Work waives the following 9 units of the MSW foundation curriculum for students in the MSW/Ph.D. Dual Degree Program: SOWK 503, SOWK 534 and SOWK 535. Content and theory from these courses will be more rigorously covered during the first year in the following Ph.D. courses: SOWK 702, SOWK 733 and SOWK 744.

The MSW and the Ph.D. degrees are awarded separately upon completion of all program requirements.

Master of Social Work/Master of Science, Gerontology

The M.S./MSW dual degree offers the student interested in direct service or community organization the credentials most valued in clinical and therapeutic practice. Students enrolled in this dual degree receive an MSW as well as an M.S. in Gerontology. This dual degree requires completion of 72 units: 32 units of work in the

Davis School of Gerontology and 40 units in the School of Social Work. The course work is usually completed over a 24-month period for full-time students. Dual degree students in this program complete the standard foundation year courses in the School of Social Work, with the exception of SOWK 535 Social Welfare. Students may select any concentration, with the exception of Families and Children. In the concentration year, students must complete the three required core concentration courses as well as SOWK 611 Leadership in the Social Work Profession and Organizations: Theory and Practice. See the Davis School of Gerontology, page xx, for course requirements.

Master of Social Work/Master of Planning, Public Policy

The dual degree program between social work and planning offers unique opportunities for students who want to devote their professional careers to social policy, social planning or social services delivery. Dual degree students in this program receive an MSW as well as a Master of Planning (MPI). The MPI/MSW degree requires completion of a total of 83 units: 51 units in social work and 32 units in planning. The course work is normally completed over a period of 28 months for full-time students.

Dual degree students in this program complete the standard foundation year courses in the School of Social Work, with the exception of SOWK 535 Social Welfare. Students must select the Community Organization, Planning and Administration (COPA) concentration. In the concentration year, students must complete the following SOWK courses: SOWK 599, SOWK 611, SOWK 629, SOWK 648, SOWK 686ab, as well as one of the following courses: SOWK 603, SOWK 636 or SOWK 672. Students must apply to both programs prior to matriculation. See the USC Price School of Public Policy, page xx, for course requirements.

Master of Social Work/Master of Public Administration, Public Policy

The Master of Public Administration/Master of Social Work (MPA/MSW) dual degree program provides those students interested in careers as administrators of social service agencies the opportunity to combine preparation in the substantive field of social work with the acquisition of the administrative capabilities necessary in the public sector. Students must complete 82 units: 54 units in social work and 28 units in public administration. Dual degree students in this program complete the standard foundation year courses in the School of Social Work. Students must select the Community Organization, Planning and Administration (COPA) concentration. In the concentration year, students must complete the following SOWK courses: SOWK 599, SOWK 611, SOWK 629, SOWK 639, SOWK 648 and SOWK 686ab. Most students complete both program requirements over a 24-month period for full-time students. See the USC Price School of Public Policy, page xx, for course requirements.

Master of Social Work/Master of Public Health, Medicine

The Master of Social Work/Master of Public Health (MSW/MPH) dual degree offers the student interdisciplinary preparation in the fields of public health and

social work leading to the Master of Social Work (MSW) and Master of Public Health (MPH) degrees. The dual degree program is a collaborative effort between the School of Social Work and the Department of Preventive Medicine in the Keck School of Medicine. The objectives of the program are to provide students with the knowledge and skills necessary to promote health, prevent disease and enhance the delivery of health and social services in the community. Students will build interdisciplinary skills and an interdisciplinary professional identity by developing an understanding of the breadth of each field and their interface, while permitting concentration in particular specialization areas. The program prepares graduates for work in a variety of interdisciplinary settings; and for some, it will provide the basis for doctoral study.

Students must complete a minimum of 81 units: 45 units in social work and 36 units in preventive medicine; 16 of these units fulfill requirements for both degrees. Depending on specific social work concentration and public health track requirements, there may be additional courses and an increase in the total number of units. Most students complete both program requirements over three years for full-time students; however, the program can be completed in two years if the student takes a full course load during the two summer sessions.

Dual degree students in this program complete the standard foundation year courses during the first year in the School of Social Work with the exception of SOWK 562 Social Work Research. Students may select only the health concentration in social work and either of two public health tracks: health education and health promotion; or child and family health.

Master of Social Work/Juris Doctor, Law

The Juris Doctor and Master of Social Work (J.D./MSW) dual degree program with the USC Gould School of Law is a four-year program in which students complete a total of 123 units. This includes 47 units in social work and 76 units in law.

To earn the J.D., all students (including dual degree students) must complete 35 numerically graded law units at USC after the first year. The associate dean may make exceptions to this rule for students enrolled in law school honors programs. Students must apply to both programs prior to matriculation. The program of study is as follows:

First and Second Years: Complete both the first year J.D. program of study and the first year MSW course of study.

Third Year: Complete the second year J.D. program.

Fourth Year: Complete the core required concentration courses and one semester of field instruction and the final semester of the J.D. program in the spring.

The law school gives credit for the third semester in the School of Social Work, while the latter recognizes law courses as substitutions for a one-semester practice course, special topics courses, a third semester of social policy and one semester of field instruction (for which a clinical law semester is substituted).

Master of Social Work/Master of Arts, Jewish Nonprofit Management

The dual degree program combines in-class learning and fieldwork under the auspices of the Hebrew Union College-Jewish Institute of Religion's School of Jewish Nonprofit Management (formerly the School of Jewish Communal Service) and the University of Southern California's School of Social Work. Students in this dual degree program simultaneously pursue graduate studies leading to the MSW and an M.A. in Jewish Nonprofit Management over a 24-month period for full-time students. A total of 90 units must be completed to meet the requirements of both degrees (44 units in social work and 46 units at the HUC-JIR School of Jewish Nonprofit Management). Dual degree students in this program complete the standard foundation year course in the School of Social Work, including the foundation field instruction. Students may select any concentration of interest. During their concentration year, students must enroll in the following: core required concentration courses: two SOWK 599 Special Topics courses (to be approved for the concentration). Students must apply to both programs prior to matriculation.

Master of Social Work/Master of Business Administration, Business

The MSW/MBA dual degree develops knowledge and skills in working with individuals, families and groups, as well as organizational dynamics, marketing, decision sciences, accounting and human relations. Students interested in working in the management of human services and not-for-profit organizations will develop knowledge of human resources, philanthropic and corporate social responsibility, organizational development and information management.

Prospective students must apply to both the School of Social Work and the Marshall School of Business.

The MSW/MBA requires completion of a total of 96 units: 48 in the Marshall School of Business and 48 in the School of Social Work. This dual degree program is typically completed in a three-year period, including summer, for full-time students.

Dual degree students in this program complete the standard foundation year courses in the School of Social Work. Students must select the social work and business in a global society concentration. During their concentration year, students must enroll in the following: three core required concentration courses and SOWK 686ab Field Practicum. Course requirements in the Marshall School of Business include all required courses in an MBA program and graduate business electives sufficient to bring the total units completed in the Marshall School of Business to at least 48. Dual degree students may not count courses taken outside the Marshall School of Business toward the 48 units.

The MBA and the MSW degrees are awarded simultaneously upon completion of all program requirements.

Undergraduate Minor Program

Minor in Children and Families in Urban America

Twenty-two units of course work are required for the completion of the minor; a total of 16 of these units must be upper division course work.

REQUIRED COURSES

		UNITS
SOWK 304	Children and Families in Urban America (gateway course)	4
SOWK 305L	Children and Families in Urban America Integrative Seminar	2
SOWK 400	Children and Families in Urban America Capstone Course	4

Students choose three elective (4-unit) courses, one from each of the following three content areas. Of the three electives, only two may be taken from the same school or department.

Families and Children

OT 330	Perspectives on the Daily Life of Families	4
PSYC 336L	Developmental Psychology	4
PSYC 437	Adolescent Development	4
SOCI 305	Sociology of Childhood	4
SOCI 369	The Family in a Changing Society	4

Communities and Culture

ANTH 370	Family and Kinship in Cross-Cultural Perspective	4
COMM 324	Intercultural Communication	4
PPD 245	The Urban Context for Policy and Planning	4
PPD 439	Housing and Community Development	4
PPD 478	Social Innovations	4
SOWK 200x	Institutional Inequality in American Political and Social Policy	4

Professions and Partnerships

COMM 320	Small Group and Team Communication	4
COMM 388	Ethics in Human Communication	4
EDPA 308	Politics and American Education	4
PPD 342	Crime and Public Policy	4
PPD 402	Management of Public and Nonprofit Organizations	4

Doctor of Philosophy

With the enrollment of a small group of highly qualified experienced social workers, the School of Social Work established the first social work doctoral program in the Western United States in 1953. Over the years, the school has continued the tradition of providing opportunities for learning in small classes, seminars and tutorials.

The major goal of the doctoral program in social work is to produce social work scholars who will have the capacity to make valuable and significant contributions to the knowledge base of the profession. Students acquire the skills necessary to become professional scholars and develop a significant capacity for professional leadership. Toward this end, the school is committed to pursuing excellence in education with persons

of definite promise and to seeking gifted students of varied social, ethnic and economic backgrounds.

Through training in specific areas, graduates of the program develop theoretical, conceptual, critical and analytic skills which can be applied to social, organizational, interpersonal and personal problems. They emerge from the program with substantive knowledge and analytic skills that enable them to contribute to understanding social problems and ways of solving them. With these skills, they are able to take a disciplined approach to the issues confronting the profession of social work and the field of social welfare and are prepared to make a significant contribution to the research and scholarship that informs society's effort to improve the human condition.

The Ph.D. program in social work is administered by the Doctoral Committee of the School of Social Work in accordance with the policies set by the Graduate School. The requirements listed below are special to the School of Social Work and must be read in conjunction with the general requirements of the Graduate School listed in this catalogue on page xx.

Admission Requirements

Applicants for admission to the doctoral program must meet the following requirements:

(1) A master's degree from a program accredited by the Council on Social Work Education or from another field related to social work.

(2) Academic promise, as evidenced by above average achievement in undergraduate and professional education and a personal statement outlining the applicant's scholarly goals.

(3) Professional competence as demonstrated through substantial experience in responsible social work, internships or other positions either during or subsequent to the master's program.

(4) Personal qualities compatible with performance in social work and indicating a potential for leadership in the field: skill in relationships, flexibility and openness to new ideas, maturity, identification with the profession of social work, and commitment to furthering the development of the profession.

(5) Satisfactory performance on the Graduate Record Examinations — existing test scores may be submitted if the GRE has been completed no more than five years prior to the date of application. Information may be obtained from the USC Center for Testing and Assessment, Student Union 301, Los Angeles, CA 90089-0896, (213) 740-7166, or from the Educational Testing Service at ets.org.

(6) Satisfactory performance on the Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) for all international students prior to the date of application. Existing test scores may be submitted if the TOEFL or IELTS has been completed no more than two years prior to the date of application. Information may be obtained from the USC Center for Testing and Assessment, Student Union 301, Los Angeles, CA 90089-0896, (213) 740-7166, or from the Educational Testing Service at ets.org.

(7) Submission of application materials as required. Instructions for application to the Doctor of Philosophy in Social Work program may be obtained by writing to the director of the program.

Under unusual circumstances, applications from persons who do not meet these requirements, including those who have just been awarded the MSW degree, will be considered. In cases where the MSW (or its equivalent) has recently been granted and the applicant does not have the prerequisite post-master's degree employment experience, it may be required that such experience be acquired concurrent with enrollment in the doctoral program.

Under very unusual circumstances, applications to the doctoral program in social work will be considered from those who do not hold the MSW or an equivalent degree. Such applicants, in order to be admitted to the program, must have a master's degree (or its equivalent) in a field related to social work and a demonstrated commitment to the field of social work as evidenced by substantial contribution to the knowledge base of the profession. Admission decisions on applicants who do not hold an MSW or equivalent degree will be made by the full Doctoral Program Committee of the School of Social Work rather than by a subcommittee of that body.

Priority will be given to applications that are completed by January 1.

Application Procedure

All applicants to the doctoral program must submit the following information: (1) graduate admission application using the university's online system; (2) statement of purpose which is submitted as part of the online application; (3) current resume which is uploaded as part of the online application; (4) all undergraduate and graduate transcripts; (5) four letters of reference, at least three of which are from persons who can assess the student's scholarly potential; (6) recent GRE scores; (7) recent TOEFL or IELTS scores; (8) documented evidence of financial support is required of all international applicants; (9) Ph.D. Information Form for the School of Social Work; (10) career plans and goals; and (11) scholarly writing sample.

Foreign Language/Research/English Language Requirements

There is no foreign language requirement for the Ph.D. degree. Competence in advanced research methodology and statistics is required through satisfactory completion of required courses. All international students are required to submit their TOEFL or IELTS scores from a test date prior to application and to meet university requirements for teaching.

Course Requirements

Students must complete a minimum of 48 course units beyond the master's degree (exclusive of SOWK 794 Doctoral Dissertation). Students must complete at least 24 units within the School of Social Work and at least three courses in other departments or schools within the university. At least 8 of these 12 units must be in courses with a substantive rather than a research-methodology or statistic focus. Students must also take at least one 3-unit elective and one additional research or statistics course either in the School of Social Work or elsewhere in the university. Each student must develop a concentration either in another discipline outside the School of Social Work (such as gerontology; sociology; psychology; preventive medicine; business;

policy, planning and development; or political science) or in a problem area where different external courses in different departments or schools bear on a specific social problem like homelessness. An overall grade point average of B (3.0) on all graduate work attempted in the doctoral program is required for graduation.

Core Content

All students are expected to master core content. They must also complete 12 units from the substantive five core courses.

REQUIRED COURSES		UNITS
24 units from the following:		
SOWK 702	Theories of Human Behavior in the Contexts of Social Environments	3
SOWK 703	Explanatory Theories for Larger Social Systems	3
SOWK 733	Policy Analysis and Advocacy in a Comparative Social Policy Context	3
SOWK 743	Theories for Practice with Small Systems	3
SOWK 744	Theories for Practice with Large Systems	3
<i>Core Courses:</i>		
SOWK 760L	Introduction to Social Work Statistics	3
SOWK 761L	Multiple Regression in Social Work Research	3
SOWK 762	Social Work Research Methods I	3
SOWK 763	Social Work Research Methods II: Issues in Research for Social Work Practice	3
SOWK 764	Advanced Multivariate Statistics	3

Macro focus: students with a macro focus in policy, community organization or administration must complete either SOWK 702 or SOWK 743 as part of their core curriculum.

Micro focus: students with a micro focus in direct practice must complete either SOWK 703, SOWK 733 or SOWK 744.

OTHER REQUIREMENTS		UNITS
Elective*		3
Research or statistics course*		3
SOWK 790	Research	6

*Must be taken in School of Social Work or elsewhere at USC

Students must complete a minimum of 12 units per semester in their first semester and second semester of their first year in the program to maintain their status as full-time students and eligibility for financial support from the School of Social Work.

Individualized Course of Study

The second year of the curriculum is largely individualized to meet each student's educational goals. It is organized around a specific field of social work practice

or a problem area. In the case of fields of practice or problem area, students gain knowledge of that field's development and policies; one level of comparative practice theory applicable to that field; comparative explanatory theory appropriate to the field and the chosen practice level; and advanced research methods which can be used to explore field-specific questions.

Field of Practice is defined as a field of activity in which there is an identifiable service delivery system, a continuum of care for clients, and a defined or established role for social workers.

Given the current expertise of the faculty and available faculty resources, students may choose from the following fields of practice specializations: (1) families and children, (2) mental health, (3) health, (4) occupational/industrial employment, (5) aging/gerontology, or (6) economic security/income maintenance.

Additional fields of practice can be added to the above choices depending on faculty interest, expertise and availability.

Problem Area is defined as a social or service delivery problem that is relevant to the field of social work such as homelessness or urban health systems.

Practice Theory is defined as advanced knowledge of comparative practice theories at one point on the intervention continuum as they relate to the field of practice chosen. The practice intervention continuum is defined to include practice with individuals, families and groups, as well as community practice, administration, planning, and policy practice.

Explanatory Theory is defined as advanced knowledge of comparative social science theories as they relate to the field of practice and level of intervention chosen.

Specialized Research Skills is defined as advanced skills in research methodology and statistics which support the student's dissertation within the field of practice.

Students fulfill the requirement for the mastery of the content of their individualized course of study through a combination of at least three (2-unit) directed tutorials (SOWK 790) with members of the social work faculty, at least three university courses in other departments of the university and an elective.

Students prepare an individualized course study plan with their faculty adviser in the spring of the first year that is approved by the doctoral committee. It details classes and tutorials that each student will take during the second year of the program.

Opportunities for Further Skill Development

The program offers students skills training in both teaching and research.

Teaching Skills

All doctoral students must teach for two semesters before they graduate. Requirements may be fulfilled by co-teaching, teaching as an assistant or solo teaching. Before beginning these teaching experiences, students must take a teaching course approved by the doctoral committee. International students must meet the English proficiency standards set forth by the

American Language Institute and participate, if necessary, in specialized training offered by the Center for Excellence in Teaching.

Additional Research Skills

Students are also offered the opportunity for enhanced skills building in research through a research internship. The one- or two- semester internship (SOWK 785), starting typically in the spring of the second year, is designed to provide students with hands-on, practical experience with an ongoing faculty research project prior to the start of their own dissertation research. Typically, activities include data collection and/or analysis. The practicum is expected to yield a paper of publishable quality co-authored by the student and the faculty member.

Students may enroll in SOWK 599 Special Topics by petitioning the doctoral committee in writing. The decision to grant or deny admission will be based on each applicant's learning and research interests and permission of the instructor.

The usual program includes two years of full-time course work, plus an additional period for completing the qualifying examinations and dissertation. In rare cases, students who are not able to take the full-time program because of employment may spread course work over three years. They must, however, have the equivalent of full-time study in residence for at least one year.

Students should specify whether they are applying for the full-time or part-time program at the time they apply to the program. Part-time students usually carry two courses per semester during the academic year. They may wish to accelerate their progress by enrolling in appropriate courses when available during the summer session.

The time limit for completing all requirements for the Ph.D. degree is eight years from the first course taken at USC to be applied toward the degree. Students who have completed an applicable master's degree at USC or elsewhere (almost all students in the social work doctoral program) must complete the Ph.D. in six years.

Transfer of Credit

The transfer of post-master's doctoral course work from another institution will only be considered if a grade of B or better (A = 4.0) has been obtained, and the course has been completed within the last five years. Transfer of credits must be petitioned and approved by both the School of Social Work and the Graduate School.

Screening Procedures

When students have completed a minimum of 16 units (but not more than 24 units) of doctoral course work, the doctoral committee assesses their performance and makes a decision about their readiness to continue in the program. If the decision is to deny permission to continue, the students are so notified. If permission is granted, a qualifying exam committee is established.

Qualifying Exam Committee

The qualifying exam committee is composed of five faculty members, four of whom, including the chair, are from the School of Social Work and one from an academic unit of the university other than the School of Social Work. The function of the qualifying exam

committee is to oversee the development of the student's academic program through the qualifying examination.

Qualifying Examination

As a prerequisite to candidacy for the Ph.D. degree, students must pass written and oral qualifying examinations. In order to take the examinations, students must complete all core courses, at least 6 units of SOWK 790 tutorials and at least 32 units of course work in the doctoral program with a minimum grade point average of 3.0.

All students must pass a qualifying examination by completing a paper that the examination committee judges to be of publishable quality and passing an oral examination on subject matter related to the paper. The paper must deal with a substantive theoretical, model-building or methodological issue in the student's chosen area. Critical reviews of the literature or reports of empirical studies conducted by the student specifically for the qualifying examination are acceptable. The topic of the paper will be chosen in conjunction with the student's chair and must be defended before and agreed to by the entire examination committee. The content of the paper is to go beyond products developed for tutorials and must be an independent effort. Further details for completing the paper and oral examination are provided as needed. When students pass the written and oral portions of the qualifying examination, they advance to candidacy.

In accordance with university policy, since the two portions of the qualifying examination are considered part of a single examination, only one retake of either portion of the examination is permitted. When the oral examination has been passed, the student is formally admitted to candidacy.

Doctoral Dissertation

When the student is admitted to candidacy, a dissertation committee is established consisting of three members of the qualifying exam committee, one of whom must be from outside the School of Social Work. The dissertation committee has the responsibility of providing consultation in research, approving the dissertation, conducting the final oral examination and recommending the candidate for the Ph.D. degree. The doctoral dissertation should make a contribution to knowledge and theory related to the profession of social work. Dissertations must not only show technical mastery of the subject and research methodology but must also demonstrate the candidate's ability to work independently as a scholar.

The first step in the dissertation process is the development of a dissertation proposal. Normally about 25-30 pages, the proposal should contain a clear statement of purpose, a rationale for the research, research questions or hypotheses, a review of pertinent literature, and an explication of the research methods to be used including the design, instrumentation, sampling procedures and plan for analysis. The proposal must include human subject clearances for the anticipated research obtained from the appropriate school and university committees.

The dissertation proposal is submitted to the student's dissertation committee and defended. Upon

approval of the proposal, a copy is filed with the director of the doctoral program.

It is expected that students will begin work on their dissertation prospectus as soon as possible after completion of the qualifying examinations, and that an acceptable proposal will be presented within three months of the completion of the examination.

Abstract of Dissertation

Since the abstract of the dissertation is also published in *Dissertation Abstracts International*, it should be written with care and must be representative of the final draft of the dissertation. A shorter abstract for publication in *Social Work Research and Abstracts* is also required.

Final Oral Examination

Upon approval of the final draft of the dissertation by all members of the dissertation committee, the candidate must pass a general final oral examination. After the candidate successfully completes the final oral examination, the committee recommends the candidate to the Graduate School for the Ph.D. degree.

Hamovitch Center for Science in the Human Services

The Hamovitch Center for Science in the Human Services, located in the School of Social Work, serves as the administrative umbrella for the school's centers of research excellence. These centers of interdisciplinary research include the areas of mental health, health, corporate and industrial social work, child abuse, interpersonal violence and other projects of interest to individual faculty. The center hosts seminars and colloquia which are open to the university and community.

Research projects are supported by federal, state, county and school resources. The center engages faculty in research, demonstration and application in building and testing theory, developing research instruments, testing models of service and treatment modalities, evaluating programs and service policy. The center also provides opportunities for doctoral students to acquire research training through ongoing and newly initiated faculty research projects. Doctoral students are encouraged to apply to participate in such projects which often lead to dissertation possibilities. Predoctoral fellowships and/or research assistantships for projects conducted at the center are sometimes available to incoming and ongoing doctoral students. The center also enables doctoral students to conduct their own research through the auspices of the center, including their dissertation research. All doctoral students are encouraged to attend and participate in the center's colloquia and programs to enhance their involvement with and skills in research and knowledge development.

Courses of Instruction

SOCIAL WORK (SOWK)

The following courses may be offered during any given term; consult the *Schedule of Classes*.

SOWK 200xm Institutional Inequality in American Political and Social Policy (4) Historic and philosophical roots of inequality for minority groups in the United States and implications for public policy. Not available for major credit.

SOWK 303 Crises in Human Development (4) Issues, concepts, and methodology related to understanding human behavior, growth and development from infancy through old age; developmental crises at each stage of the life cycle.

SOWK 304 Children and Families in Urban America (4) Gateway to the minor in Children and Families in Urban America. Provides foundation for principles on the conditions of children, families and communities, partnerships between families and human service professionals, and interprofessional practice in urban American communities.

SOWK 305L Children and Families in Urban America Integrative Seminar (2) Introduction to human service professionals, agencies and institutions in the greater Los Angeles area which serve children and families who reside there.

SOWK 350 Adolescent Gang Intervention (4) The incidence of gangs (particularly in the Los Angeles area), gang interventions, and policies developed to address the growing gang situation.

SOWK 390 Special Problems (1-4) Supervised, individual studies. No more than one registration permitted. Enrollment by petition only.

SOWK 400 Children and Families in Urban America Capstone Course (4) The capstone course for the "Children and Families in Urban America" minor will provide an opportunity to understand the relationship between federal, state, and local policies which provide services to children and families. It will apply the knowledge learned in previous minor-related courses.

SOWK 499 Special Topics (2-4, max 8) Selected topics in various specialty areas within social work.

SOWK 503 Human Behavior and the Social Environment I (3) The ecological systems paradigm is the lens through which theories of personality, family, group, organization, community and culture and the interaction among these systems are explored.

SOWK 505 Human Behavior and the Social Environment II (3) The course of human life, including the factors which impinge on the developmental continuum between normal and pathological conditions. *Prerequisite:* SOWK 503.

SOWK 522 Global Violence Against Women (3) This course provides a broad understanding of violence against women within a global context.

SOWK 534 Policy and Practice in Social Service Organizations (3) Study of social work organizations with emphasis on their policy contexts, organizational theory, and the development of delivery systems.

SOWK 535 Social Welfare (3) Structure and operation of current American social welfare programs (social policy analysis). *Prerequisite:* SOWK 534.

SOWK 543 Social Work Practice with Individuals (3) Theory and principles underlying generic social work practice with primary emphasis on working with individuals.

SOWK 545 Social Work Practice with Families, Groups and Complex Cases (3) Theories and principles with primary emphasis on families and groups with application to problems requiring multi-level interventions. *Prerequisite:* SOWK 503, SOWK 534, SOWK 543.

SOWK 562 Social Work Research (3) Introduction to research methods, including conceptualization of research problems, literature review, research design, sampling, measurement, data collection and data analysis.

SOWK 586ab Field Practicum (3-3) Supervised field placement to develop generalist practice skills in working with individuals, families, groups, communities and organizations. Graded IP/CR/NC.

SOWK 587ab Integrative Learning for Social Work Practice (2-2) Integrative content from Policy, Research, Human Behavior, Social Work Practice and Field Practicum. Graded CR/NC. *Concurrent enrollment:* a: SOWK 586a, SOWK 543; b: SOWK 586b, SOWK 545.

SOWK 590 Directed Research (1-12) Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

SOWK 599 Special Topics (1-4, max 13)

SOWK 600 Assessment in Social Work Practice (2, Sm) Theory and principles underlying generic social work practice with primary emphasis on psychosocial assessment. Open only to master's students in the School of Social Work.

SOWK 601 Advanced Theories and Interventions with Children and Adolescents (3) Advances students' knowledge and clinical skills working with children and adolescents. Emphasis on problems affecting children, including developmental derailments and disruptions. *Prerequisite:* SOWK 505, SOWK 545; or SOWK 600, SOWK 604, and SOWK 606.

SOWK 602 Advanced Theories and Clinical Interventions with Families (3) Advances students' knowledge and clinical skills working with diverse urban families experiencing various stressors. Exploration and application of a range of family therapy models. *Prerequisite:* SOWK 505, SOWK 545; or SOWK 600, SOWK 604, and SOWK 606.

SOWK 603 Merging Policy, Planning and Research for Change in Families and Children's Settings (3) Development and evaluation of service programs for children and families incorporating social welfare policy, macro practice and research skills. *Prerequisite:* SOWK 534, SOWK 535, SOWK 562; or SOWK 600, SOWK 604, and SOWK 606.

SOWK 604 The Role of Evidence-Based Practice in Social Work (2, Sm) Study of the important role research plays in the development of evidence-based practice methods. Open only to doctoral and master's students in the School of Social Work.

SOWK 605 Human Development and Mental Health (3) Understanding problem-producing behaviors and their ramifications on individuals, families, and groups that comprise the clientele in mental health settings. Required for students in Mental Health concentration. *Prerequisite:* SOWK 503, SOWK 505; or SOWK 600, SOWK 604, and SOWK 606.

SOWK 606 Neuropsychological Development (2, Sm) Study of human neuropsychological development within the context of social work. Open only to doctoral and master's students in the School of Social Work.

SOWK 607 Feminist Theory, Social Action, and Social Work: Philippines (4, Sm) Understanding and awareness of the political, economic, social, and cultural contexts through a feminist perspective, using the Philippines as a case study. *Prerequisite:* SOWK 505, SOWK 535.

SOWK 611 Leadership in the Social Work Profession and Organizations: Theory and Practice (3) Through didactic and experiential methods, students learn to interpret and apply leadership theory and research. Covers skills of effective leadership at all organizational levels.

SOWK 612 Psychopathology and Diagnosis of Mental Disorder (3) Assessment of psychopathology, and the rationale and organization of the system for diagnosis of mental disorders. Emphasis is on developing differential diagnostic skills.

SOWK 614 Social Work Practice in School Settings (3) Based on ecosystems perspectives, this course examines policies, theories and principles of social work practice in school settings.

SOWK 615 Brief Therapy and Crisis Intervention (3) Theory and multimodal approaches for brief therapy and crisis intervention with diverse clientele in a range of mental health and health settings.

SOWK 616 Clinical Practice with Older Adults (3) Developmental tasks of adulthood and later life, as well as assessment and intervention for problems and disorders associated with aging.

SOWK 617 Substance Abuse with Consideration of Other Addictive Disorders (3) Exploration of nature and treatment of substance abuse and other addictive disorders as well as relevant treatment models for individuals, groups and families.

SOWK 618 Systems of Recovery from Mental Illness in Adults (3, FaSpSm) Focus on the multi-level impact of mental illness on adults and families. Evidence-based interventions promoting increased quality of life and stability are emphasized.

SOWK 619 Social Work in Public Child Welfare Settings (3) This advanced seminar will provide tools to enhance the practitioner's response to the special challenges (substance abuse, HIV/AIDS, domestic violence) in public child welfare.

SOWK 620 Social Work Practice With Transitional Youth (3, FaSpSm) Students will be introduced to policies affecting transitional youth and use a biopsychosocial perspective to work with them on macro, meso, and micro levels. (Duplicates credit in former SOWK 525.)

SOWK 622 Social Work Practice with African American Families (3, FaSpSm) Presents various theories for understanding African American families and addresses an Africentric framework for clinical practice and intervention with individuals and families. *Prerequisite:* SOWK 503, SOWK 505, SOWK 534, SOWK 535.

SOWK 625 Evaluation of Research: Mental Health (3) Range of research conducted in mental health; evaluation of selected research reports and their application to social work practice. Required for students in Mental Health concentration. *Prerequisite:* SOWK 562; or SOWK 600, SOWK 604, and SOWK 606.

SOWK 626 Social Conflict, Empowerment and Creative Practice in Israel (4, Sm) The summer global immersion program in Israel focuses on understanding social problems and alleviating them through empowerment approaches and the utilization of expressive practices. Open only to social work students.

SOWK 628 Social Work with Latino Populations (3, Fa) Current issues, trends and developments in social work practice with Latino populations.

SOWK 629 Evaluation of Research: Community Organization, Planning and Administration (3) Research for macro-practice, emphasizing qualitative methods, participatory action research, program evaluation, needs assessment; mapping and GIS to understand urban environments. *Prerequisite:* SOWK 562; or SOWK 600, SOWK 604, and SOWK 606.

SOWK 631 Advanced Theories and Clinical Interventions in Health Care (3) Evaluation of theory, best practices, emerging issues, and skill development in health settings; interaction among cultural, socio-economic, and organizational factors. *Prerequisite:* SOWK 505, SOWK 545; or SOWK 600, SOWK 604, and SOWK 606.

SOWK 632 Program Planning and Evaluation in Health Care (3) Program and intervention development and evaluation research in health settings. Issues and skill development in program design and methods for evaluation. *Prerequisite:* SOWK 562; or SOWK 600, SOWK 604, and SOWK 606.

SOWK 636 Policy in the Health Care Sector (3) Analysis of behavioral, practice and research considerations in addressing a range of health problems and the policy-making process. Required for students in Mental Health in Health Settings concentration. *Prerequisite:* SOWK 535; or SOWK 600, SOWK 604, and SOWK 606.

SOWK 639 Social Policy for Managers, Planners and Community Organizers (3) Analysis of efforts to improve local human services organizations and agencies with consideration of political, social, demographic and organization contexts. *Prerequisite:* SOWK 535; or SOWK 600, SOWK 604, and SOWK 606.

SOWK 640 Clinical Practice with the Military Family (3) Theoretical and practical approaches to clinical practice with military families. Overview of common social issues in the military system and demands on the family dynamic. *Prerequisite:* SOWK 505, SOWK 535.

SOWK 641 Clinical Practice with Service Members and Veterans (3) Theoretical and practical approaches to trauma for use in treatment of PTSD. Advances students' knowledge of best practices and current evidence-based models on PTSD. *Prerequisite:* SOWK 505, SOWK 535.

SOWK 645 Clinical Practice in Mental Health Settings (3) Social work processes from intake to termination; emphasis on clinical skills required for social work practice in a broad spectrum of mental health settings. Required for students in Mental Health concentration.

SOWK 648 Management for Community and Social Services (3) Methods and principles of management in urban settings with primary emphasis on strategic management, finance analysis, and innovative project development.

SOWK 653 Social Work with Older Adults (3, FaSpSm) Integrates foundation and advanced knowledge and skill for practice with and in behalf of older adults.

SOWK 655 Global Immersion in Military Culture: U.S. Forces Abroad (4, Sm) This course will enhance students' understanding of the delivery of human services on overseas military installations.

SOWK 660 Health Care Delivery Systems: Planning for Health and Social Services (3) Evaluating health care delivery systems in the U.S. and internationally including community social capital, health disparities, access to care, and policy implications for diverse populations.

SOWK 661 Case Management as a Service Model (3) Case management as a service model for increasing cost effectiveness and quality of care for diverse populations including transitional planning, utilization management and resource utilization.

SOWK 662 Information Technology for Human Services (3) Information technology as a resource for quality health and human services. Implications for interagency collaboration, empowerment of clients and professionals, evidence-based practice, education and ethics.

SOWK 663 Clinical Practice with Couples (3) Examination of major models and diverse intervention strategies to ameliorate common presenting problems of couples. *Prerequisite:* SOWK 503, SOWK 505, SOWK 534, SOWK 535.

SOWK 664 Consultation, Coaching and Social Entrepreneurship (3) Expanding roles that social workers play within both non-profit and for profit corporations. *Prerequisite:* SOWK 503, SOWK 505, SOWK 534, SOWK 535.

SOWK 665 Program Development and Grant Writing for Social Workers (3) Planning and program development that are generalized to any setting and relevant to direct and macro social work practice expertise. *Prerequisite:* SOWK 503, SOWK 505, SOWK 534, SOWK 535.

SOWK 666 Domestic Violence (3) Recognition of domestic violence and examination of effective intervention measures and preventive methods. *Prerequisite:* SOWK 503, SOWK 505, SOWK 534, SOWK 535.

SOWK 667 Information Systems for Program Development (3) Theoretical framework and practical skills in the use of some of the most common and up-to-date applications today of computers and electronic communication. *Prerequisite:* SOWK 503, SOWK 505, SOWK 534, SOWK 535.

SOWK 668 Social Work and Law (3) Examination of roles, opportunities, and concerns for the practice of social work in the structures and procedures of the law. *Prerequisite:* SOWK 503, SOWK 505, SOWK 534, SOWK 535.

SOWK 669 Managing Change and Organization Development (3) Conceptual framework and practical skills needed to design, implement and evaluate effective change and organization development programs. *Prerequisite:* SOWK 503, SOWK 505, SOWK 534, SOWK 535.

SOWK 670 Global Dimensions in Social Policy and Social Work Practice (3) Exploration and critique of how political, economic, cultural, religious and environmental factors impact social welfare policies, social work practice, and social development globally. *Prerequisite:* SOWK 505, SOWK 535.

SOWK 671 Micro Practice and Evaluation in Work-Related Environments (3, FaSpSm) Drawing upon clinical evidence-based models, this course prepares students for micro level practice and evaluation to improve individual/family well-being within diverse work-related practice environments. *Prerequisite:* SOWK 505, SOWK 545; or SOWK 600, SOWK 604 and SOWK 606.

SOWK 672 Context and Policies of Social Work Practice in Work Environments (3, FaSpSm) Prepares students for practice in work-related environments through analysis of practice roles, settings, historical to current practice trends, business and economic contexts, and policy analysis. *Prerequisite:* SOWK 600 and SOWK 604 and SOWK 606 or SOWK 535.

SOWK 673 Macro Practice and Evaluation in Work-Related Environments (3, FaSpSm) Prepares students for macro level practice and evaluation in work-related environments to improve individual, family, organizational and community well-being. *Prerequisite:* SOWK 600 and SOWK 604 and SOWK 606 or SOWK 562.

SOWK 674 Human Sexuality in Clinical Social Work Practice (3) Explores physiological, psychological, and sociocultural variables associated with sexual identity, sexual orientation, and sexual behavior to increase student understanding and appreciation for human sexual behavior. *Prerequisite:* SOWK 505, SOWK 535.

SOWK 675 Play Therapy in Social Work with Children and Adolescents (3) Advances student theoretical knowledge and clinical practice skills in working with children, adolescents, and their families and explores the process of child psychotherapy. *Prerequisite:* SOWK 505, SOWK 535.

SOWK 676 Psychopharmacology for Therapists and Counselors (1, FaSpSm) Overview of various classes of basic psychotherapeutic medications. Useful to social workers, counselors, therapists, and other individuals who counsel and treat mentally ill patients.

SOWK 677 Mental Health Practice with Children and Adolescents (3) The assessment and treatment of children with serious emotional disturbance, including the service delivery models and policies that influence service delivery. *Prerequisite:* SOWK 505, SOWK 535.

SOWK 678 Child Abuse and Neglect: Intervention and Treatment (3) Advanced practice course focusing on interventions with and treatment of complex family systems where the effects of child maltreatment are the presenting problems. *Prerequisite:* SOWK 505, SOWK 535.

SOWK 679 Mezzo Theory and Practice in Work-Related Environments (3, FaSpSm) Emphasizing group and organizational dynamics, this course provides an understanding of human behavior in work-related environments, and prepares students for mezzo practice in these settings. Open only to master's students in the School of Social Work. *Prerequisite:* SOWK 503, SOWK 505, SOWK 534, SOWK 535.

SOWK 680 Social Work Spanish for Culturally Competent Services (3) Integration of cross-cultural practice skills with Spanish language development through the class instruction and practice development. *Prerequisite:* SOWK 503, SOWK 505, SOWK 534, SOWK 535.

SOWK 681 Managing Diversity in a Global Context (3) Interdisciplinary approach to innovative practices that make the workplace more inclusive and productive. *Prerequisite:* SOWK 503, SOWK 505, SOWK 534, SOWK 535.

SOWK 682 Spirituality, Religion, and Faith in Clinical Practice (3) Examination of diverse spiritual and religious traditions. Spiritually-sensitive treatment approaches applied to psychological and spiritual clinical problems of individuals, couples, and families. *Prerequisite:* SOWK 505, SOWK 535.

SOWK 683 Hypnosis Social Work Practice (3) Examination of major theoretical and practice applications of hypnosis in social work practice and development of a beginning level of competency. *Prerequisite:* SOWK 503, SOWK 505, SOWK 534, SOWK 535.

SOWK 684 Community Practice for Social Change (3) Prepares students to work effectively within complex and diverse community settings. *Prerequisite:* SOWK 503, SOWK 505, SOWK 534, SOWK 535.

SOWK 685 Working with Adolescents: Practice, Systems and Advocacy (3) Enhance knowledge and skill in working with adolescents involved in the child welfare, juvenile justice and other systems. *Prerequisite:* SOWK 505, SOWK 535.

SOWK 686abc Field Practicum II (4-4-4) Supervised field placement to develop depth of skill and practice in area of concentration. Graded CR/NC/IP. Open only to Social Work students. *Prerequisite:* SOWK 586ab.

SOWK 687 Media in Social Work (3) Creation of short documentaries for social change. Techniques in media production, strategies for media outreach, and development of media literacy skills to deconstruct media messages. *Prerequisite:* SOWK 505, SOWK 535.

SOWK 688 School Violence (3) Examines theoretical, empirical and practice-based literature on school violence including how students' physical well-being, academic functioning, social relations, and emotional and cognitive development are affected. *Prerequisite:* SOWK 505, SOWK 535.

SOWK 689 Models of Family Therapy: Theory and Practice (3) Expand students' theoretical and practical competence in systemic and narrative family therapy models for work with 21st century families. *Prerequisite:* SOWK 505, SOWK 535.

SOWK 690ab Research (1-4; 1-4) Intensive individual study of specific problems. Graded CR/NC.

SOWK 691 Psychosocial Issues in Health and Mental Health (3) Course examines psychosocial issues in health, including coping and social support, chronic illness, patient-provider communication, stigma and discrimination, quality of life, religion/spirituality, and social justice. *Prerequisite:* SOWK 505, SOWK 535.

SOWK 692 Loss, Grief and Bereavement (3) Focus on the experiences of loss, death and bereavement as it is viewed by individuals, families and loved ones. *Prerequisite:* SOWK 505, SOWK 535.

SOWK 693 Diagnosing Psychopathology: Introduction to DSM IV-TR (1) Advanced exposure to several issues in the area of adult psychopathology and diagnostics through didactic and experiential modalities. *Prerequisite:* SOWK 505, SOWK 535.

SOWK 694 Group Psychotherapy in Mental Health Settings (3) Focus on group therapy for clinical social workers as practiced in various mental health settings. The entire process of group development is examined. *Prerequisite:* SOWK 505, SOWK 535.

SOWK 695 Research Project I (2) Credit on acceptance of professional research project proposal. Graded CR/NC. *Prerequisite:* SOWK 562.

SOWK 696 LGBT Psycho/Social/Political Issues (3) Overview of clinical, social and political issues with which social workers should be familiar when working with lesbian, gay, bisexual and transgender clients. *Prerequisite:* SOWK 505, SOWK 535.

SOWK 697 Research Project II (1) Credit on acceptance of professional research project. Graded CR/NC. *Prerequisite:* SOWK 695.

SOWK 700 Innovations in Interactive Media and Informatics (3, SpSm) Theory, design, and analysis of interactive media research applications and informatics resources relevant to behavior and neurobiology within global interdisciplinary practice and policy settings. Open only to doctoral students. *Recommended preparation:* advanced research methods classes and grounding in discipline.

SOWK 702 Theories of Human Behavior in the Contexts of Social Environments (3) A focus on human behavior in interaction with the social environment; major paradigms including general systems theory, ego psychology, and role theories are examined.

SOWK 703 Explanatory Theories for Larger Social Systems (3) Theories of organizational and community behavior are examined in relation to their influence on the development of social services.

SOWK 733 Policy Analysis and Advocacy in a Comparative Social Policy Context (3) Examination of the evolution of American and other welfare states in selected nations. Analysis of global welfare institutions. Engaging in policy analysis in a comparative context.

SOWK 743 Theories for Practice with Small Systems

(3) Early practice theories and their historical roots are examined. Implications for evolving current practice theories with individuals, families, and groups are discussed.

SOWK 744 Theories for Practice with Large Systems

(3) Examination of the development and utility of theories, models and approaches to social work community and administrative practice.

SOWK 760L Introduction to Social Work Statistics

(3) Foundation course covering univariate and bivariate descriptive and inferential statistics. Required lab covering basic computer skills and utilization of statistical software.

SOWK 761L Multiple Regression for Social Work Research

(3) Multivariate statistical methods including descriptive and inferential statistics, parametric and non-parametric tests of hypotheses; correlation, analysis of variance, multiple regression, and factor analysis; utilization of computer programs for statistical analysis.

SOWK 762 Social Work Research Methods I (3)

Models of research, the nature of inquiry, and the research process including problem formulation, measurement, designs, sampling and data sources. *Prerequisite:* doctoral standing.

SOWK 763 Social Work Research Methods II: Issues in Research for Social Work Practice (3)

Research methods to provide students with advanced methodological knowledge in two areas related to social work practice: psychotherapy outcome research and program research. *Prerequisite:* SOWK 762.

SOWK 764 Advanced Multivariate Statistics (3)

Introduction to single equation statistical modeling using limited dependent variables (categorical and ordered categorical). Methods are drawn from statistics and econometrics.

SOWK 770 Introduction to Qualitative and Mixed Research Methods (3)

Overview of the use of qualitative and mixed methods in social, clinical and health services research.

SOWK 781 Guided Teaching Experience (2)

Mentorship with a member of the teaching faculty; discussions of curriculum design; observation; preparation and delivery of selected course sessions. Graded CR/NC.

SOWK 785 Guided Research Internship (2)

Research practicum designed to provide students with hands-on practical experience with an ongoing faculty research project. Graded CR/NC. *Prerequisite:* SOWK 763.

SOWK 790 Research (1-12)

Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

SOWK 794abcdz Doctoral Dissertation (2-2-2-2-0)

Credit on acceptance of dissertation. Graded IP/CR/NC.